# FINAL REPORT VOLUME I

# WELLSITE EVALUATIONS AREAS OF ALLEGED RELEASES SUSQUEHANNA COUNTY, PENNSYLVANIA



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### **EXECUTIVE SUMMARY**

URS Corporation (URS) was retained to investigate allegations made by Ex. 6-Personal Privacy
regarding environmental impacts to soil and surface water from natural gas drilling
operations conducted by Cabot Oil & Gas Corporation (Cabot) in Springville and Dimock
Townships, Susquehanna County, Pennsylvania. In response to Ex. 5-Personal Privacy allegations, Cabot
launched an investigation of the conditions and potential environmental impact of those
conditions at well sites identified by Ex.6-Personal Privacy A Work Plan was developed based on site
meetings led by Ex. 6 - Personal Privacy and attended by his attorney (Mr. Paul Schmidt), the
Pennsylvania Department of Environmental Protection (PADEP) (Mike O'Donnell, Eric
Rooney, and Sean Robbins), Fulbright & Jaworski L.L.P. (Mr. Ken Komoroski and Ms. Amy
Barrette), Cabot (Phil Stalnaker and Phillip Hill), and URS ( Ex. 4 - CBI held on Friday,
December 18, 2009.
This Work Plan was prepared to allow implementation of soil and surface water studies.
These studies were then performed by URS to demonstrate that any releases or incidents
alleged by were either confirmed or proven not to have occurred and, to the extent
that detectible concentrations of constituents of concern or pollutants were identified, these
constituents were either remediated or confirmed to exist below the established action levels.
Where appropriate, test pits were excavated by URS to demonstrate that areas were
investigated even where was unsure of the precise locations of alleged incidents.
This report summarizes the results of implementation in late 2009 and 2010 of the Work Plan
developed to address allegations by Ex.6-Personal Privacy garding eleven (11) Wellsites in Dimock and
Springville Townships, Pennsylvania. Based on our investigation of conditions, it was
decided to do assessment at two additional Wellsites (Ex. 6 - Personal Privacy) 1 and 6) unrelated
to Ex.6-Personal Privacy allegations.
i i

The investigation observed detectible concentrations of various constituents in the vicinity of some of the Wellsites investigated. These observations are not surprising and are anticipated with any investigation. Overall, metals were the most commonly detected of the constituents in soil, groundwater, and surface water samples. The most common naturally-occurring mineral-forming metals such as aluminum, iron, manganese, magnesium, potassium, and sodium were identified in the majority of samples. The presence of these

metals are indicative of the normal mineral content of the soil, groundwater, and surface water sampled and do not provide evidence of a release.

For soil, no constituent was detected above its respective Statewide Health Standard (SHS) residential, used-aquifer (R-U) Medium-Specific Concentration (MSC), except for manganese in a few isolated soil samples, and arsenic in soil. However, these Wellsites meet PADEP's standards under Act 2 for manganese and arsenic. Arsenic concentrations were within the range of naturally-occurring background concentrations observed in the area. Arsenic was detected above its SHS R-U MSC sporadically across the study area, both in soil and fill materials used to construct Wellsites. Arsenic or arsenic-based compounds are not known to be used in drilling or hydraulic fracturing or in substances that are alleged by [ELS-PROSON] to have been released at the various Wellsites evaluated. The range of arsenic concentrations detected is narrow, with no soil sample showing arsenic above 42.6 mg/kg. Prior studies of naturally occurring arsenic in soil performed by Cabot in Dimock and Springville Townships have shown that the natural background concentration of arsenic has been up to 236 mg/kg. Arsenic at the observed concentrations is representative of the range of native content in soil and bedrock in the study area and within the naturally-occurring background concentrations in the area of these Wellsites. The observed arsenic concentrations are, therefore, due to the presence of naturally-occurring minerals in the soil and sediment of the region.

URS also collected twenty-four samples of surface water in the vicinity of each of the Wellsites. The results were compared to numeric concentrations adopted by PADEP under Pennsylvania's surface water quality criteria. PADEP uses the surface water quality criteria to evaluate, based on data collected over time and in multiple locations in accordance with the State monitoring plan, whether surface water in the State supports various aquatic and human uses. No constituent was detected above the surface water quality criteria except for aluminum and iron, which were detected above the surface water quality criteria for aquatic life in seven of twenty-four unfiltered samples collected at different locations in the vicinity of nine of the thirteen sites. Dissolved iron was detected above the surface water quality criteria for human health in one sample collected from a wetland in the vicinity of one site. No other constituents were detected above the surface water quality criteria, as would have been expected if the observations were attributable to drilling activities.

The observed range of concentrations of aluminum and iron in surface water samples collected from streams in the vicinity of the Wellsites is consistent with expected variability in sediment and surface water quality for streams near the study area, as reflected in data collected by the U.S. Geological Survey (USGS). Concentrations of total aluminum and total iron observed in wetland environments and ponds sampled as part of this investigation observed total aluminum and total iron concentrations that range higher than in the streams sampled, but are still within the anticipated range of concentrations for the pond and wetland environments, where aluminum and iron concentrations vary widely due to a variety of naturally-occurring detritus and humic material that collects in areas of standing water and variables such as depth, rainfall, use, turbidity, and water chemistry. The observed results do not indicate a release or impacts to streams, ponds or wetlands related to Cabot's drilling activity at any Wellsite, as discussed in more detail in Section 4 of this report.

The results of sampling and analysis of soil from soil borings and test pits, as well as surface water samples, are summarized by individual Wellsite below.

E	x. 6 - Personal Privacy	1H	Well	site											
_	Samp	ling	and	analy	ysis of	f soil fro	m two so	il borir	igs (2	samples	) ar	nd 12 surfa	ace s	oil locat	ions
	(12 sa	amp	les),	and	surfa	ce wate	r sample	s from	two	locations	(2	samples)	at th	e Luc - Philosof Philosop	1Н
	Wellsi	te ic	dentif	ied th	ne foll	owing:								L	j

- Low levels (less than 1 mg/l) of the indicator parameter MBAS were observed in subsurface soil at this Wellsite in one of two samples. MBAS could be indicative of either naturally occurring or man-made surfactants;
- Metals detected in soil were observed at concentrations below their SHS R-U MSCs;
- No volatile Organic Compounds (VOCs) or Semi-Volatile Organic Compounds (SVOCs) were detected in soil above their respective SHS R-U MSCs; and
- Surface water sampling in 2008 shortly after the suspected release detected metal constituents as total recoverable in concentrations higher than the surface water quality criteria. However, as of late 2009, no constituent was detected in the two surface water samples above the surface water quality criteria except for total aluminum in one of the two downgradient, unfiltered samples, which was very slightly higher than the surface water quality criteria for aquatic life. These observations are consistent with expected variability in sediment and surface water quality. They do not indicate current surface water impacts at the \_\_\_\_\_1H Wellsite.

URS later installed three groundwater monitoring wells and sampled them in November 2010, March 2011, June 2011, and August 2011. The results of the quarterly sampling for a one-year period demonstrate attainment of the SHS R-U MSC for groundwater at the downgradient point of compliance (MW-1) under Act 2. Results of confirmational soil sampling and groundwater monitoring in 2010 and 2011, as well as surface water sampling done shortly after the suspected release, are reported separately in a Remedial Investigation and Final Report ("Final Report") on this Wellsite submitted to PADEP by Cabot with this report.

The 2010-2011 groundwater findings detailed in the Final Report are summarized below:

- As is typical in groundwater sampling, total and dissolved metals were detected in most groundwater collected. Concentrations of all constituents were below their respective MSCs at the point of compliance ("POC") well, demonstrating attainment of the SHS R-U MSCs; and
- No TCL VOCs or TCL SVOC were detected in groundwater samples at concentrations above their respective SHS R-U MSCs for all samples.

URS also conducted confirmational sampling to evaluate for soil impacts in the area of the seep. Arsenic and manganese in soil downhill from the well pad both exceeded their respective SHS R-U MSC in two of 12 randomly-located samples. These findings

demonstrate attainment of the SHS R-U MSCs under the 75%-10X Rule (PA Title 25, §250.707(b)(1)(i)) for arsenic and manganese. Random sampling locations were determined using PADEP's systematic random sampling protocol.

# Ex. 6 - Personal Privacy 1H Wellsite

Sampling and analysis of soil from 9 test pits (18 samples) and surface water samples from two locations (2 samples) at the samples identified the following:

- MBAS (one sample) and DRO (two samples) were detected in three of the 18 samples analyzed; however, these constituents are indicator parameters and as such, are not regulated (there is not an established MSC under Act 2). The regulated petroleum constituents in samples exhibiting DRO were present below the respective SHS R-U MSCs:
- SVOCs were not detected above their respective SHS R-U MSCs;
- None of the VOCs, SVOCs, and petroleum hydrocarbons were detected in surface water samples, and no metals were detected their respective surface water quality criteria; and
- Chloride and total dissolved solids (TDS) were not detected in either surface water sample at concentrations above surface water quality criteria.

# Ex. 6 - Personal Privacy 1 Wellsite

- Sampling and analysis of soil from two soil borings (2 samples) and surface water samples from two locations (2 samples) at the [Ex.6-Personal Privacy] 1 Wellsite identified that none of the constituents analyzed under the Pit/Frac Suite of compounds (Appendix A Table 2) were present in either the soil at concentrations above their respective applicable SHS R-U MSCs or the surface water at concentrations above the relevant water quality criteria. The Pit/Frac Suite of Compounds was developed with input from PADEP to investigate the potential for the content of drill pits or hydraulic fracturing fluids to have been released into the environment.
- No constituent was detected in surface water above its respective surface water quality criteria for human health. No constituent was detected above its respective surface water quality criteria for aquatic life except total aluminum and total iron in an unfiltered, downgradient stream sample. These observations are consistent with expected variability in sediment and surface water quality. They do not indicate

releases or surface water impacts related to Cabot's operations at the Wellsite.

Ex. 6 - Personal Privacy	,]′
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# Ex. 6 - Personal Privacy 1 Wellsite

Sampling and analysis of soil from two soil borings (2 samples) and surface water samples from two locations (2 samples) at the state of the following:

- Indicator parameters DRO, MBAS, and ethylene glycol were not detected in any of the soil or surface water samples analyzed;
- VOCs and SVOCs were not detected in soil above their respective SHS R-U MSCs.
   No VOCs or SVOCs were detected in surface water samples above the laboratory reporting limit;
- Arsenic was present at 12.5 mg/kg in one of the two samples analyzed above its SHS R-U MSC of 12 mg/kg, which is within the range of naturally-occurring arsenic for soils. The remainder of the metals analyzed were not detected in soil above their respective SHS R-U MSCs.
- No constituent was detected in surface water above the human health-based surface water quality criteria for human health. No constituent was detected above its respective surface water quality criteria for aquatic life except total aluminum and total iron in the unfiltered sample from the pond. No other metal or other constituent was detected above the surface water quality criteria, as would have been expected to be observed had these observations been attributable to drilling activities. The aluminum and iron observations are consistent with expected variability in sediment and surface water quality. These observations do not indicate releases or surface water impacts related to Cabot's operations at the surface water above the human health-based surface water above the surface water quality criteria for aquatic life except total aluminum and total iron in the unfiltered sample from the pond. No other metal or other constituent was detected above the surface water quality criteria, as would have been expected to be observed had these observations been attributable to drilling activities. The aluminum and iron observations are consistent with expected variability in sediment and surface water quality. These observations do not indicate releases or surface water impacts
- Chloride and TDS were not detected in either surface water sample at concentrations their respective surface water quality criteria.

# 1H/5H/7H SE Wellsite

Sampling and analysis of soil from four soil test borings (4 samples) and four test pits (8 samples) at the 1H/5H/7H SE Wellsite identified the following:

- For the soil samples for the soil test boreholes:
  - o Indicator parameters MBAS and ASTM chloride in soil were not detected in three of the four soil samples. In the fourth soil sample, results for both parameters

- were only slightly above the laboratory reporting limits; therefore, in conjunction with the other data collected, are not considered to be a concern;
- Ethylene glycol was not detected above the laboratory reporting limit;
- The VOCs acetone, methyl ethyl ketone (2-butanone), and toluene were detected in soils below their respective SHS R-U MSCs. The SVOC m&p-cresols was detected above the laboratory detection limit, but below its SHS R-U MSC. No other SVOCs were detected in the soil samples from the soil test boreholes.
- No metals were detected in soil samples at concentrations above their respective SHS R-U MSCs.
- For the soil samples from the four test pits (8 samples), all analytes for parameters on the PA Short List for Diesel (Appendix A – Table 2) were not detected above the laboratory reporting limit.

# 2 Wellsite

Sampling and analysis of soil from two soil test boreholes (2 samples) and surface water samples from two locations at the 2 Wellsite identified the following:

- MBAS and ASTM chloride in soil were not detected in either of the two soil samples analyzed;
- Ethylene glycol was not detected in soil in either of the samples analyzed;
- The VOCs acetone, methyl ethyl ketone (2-butanone), and toluene were detected in soil below their respective SHS R-U MSCs. No SVOCs were detected in either soil sample. No VOCs or SVOCs were detected in surface water;
- Arsenic was present in the two samples analyzed (19.6 and 15.4 mg/kg) above its SHS R-U MSC of 12 mg/kg, which is within the range of naturally-occurring arsenic for soils in the area. Other metals detected in soil were all observed at concentrations less than their respective SHS R-U MSCs; and
- No constituent was detected in surface water above its surface water quality criteria for human health. No constituent was detected above its surface water quality criteria for aquatic life except total aluminum and total iron in the unfiltered downgradient stream sample. No other metals or other constituents exceeded its surface water quality criteria, as would have been expected to be observed if these results were attributable to drilling activities. The aluminum and iron observations are consistent with expected variability in sediment and surface water quality. They do not indicate impacts related to Cabot's operations at the 2 Wellsite.

### 4/6H Wellsite

Sampling and analysis of soil from 7 test pits (14 samples) and three surface water samples from two locations at the 4/6H Wellsite identified the following:

- ASTM chloride in soil was detected in four of the 14 soil samples analyzed; however, this parameter is not regulated in soils, and there is not an established MSC under Act 2. Neither chloride nor TDS were detected in surface water above the surface water quality criteria. The concentrations of ASTM chloride in soil observed would not be expected to impact nearby surface waters or groundwater;
- Indicator parameters ethylene glycol and MBAS were not detected in soil;
- The indicator parameter DRO was detected in five of the 14 samples analyzed.
   However, analysis of the samples for the PA Short List for Diesel shows that none of these compounds were present in the soil samples at concentrations above their respective SHS R-U MSCs;
- No SVOCs were detected in soil samples above their respective SHS R-U MSCs;
- VOCs and SVOCs, and the indicator parameters ethylene glycol, MBAS and DRO, were not detected in surface water samples above the laboratory reporting limit. No metals or chloride were detected in surface water samples were at concentrations above the surface water quality criteria; and
- The pH of two of the three surface water samples was outside of (lower than) the range of the surface water quality criteria for aquatic life. The field duplicate for the seep sample had a pH within the surface water quality criteria, showing that this condition is variable and within the range expected for this water body.

# Ex. 6 - Personal Privacy 2/7H NW Wellsite

Sampling and analysis of soil from 16 test pits (33 samples) at the least pits (27H NW Wellsite identified the following:

- ASTM chloride in soil was detected in seven of the 33 soil samples analyzed; however, this parameter is not regulated in soils, and there is not an established MSC under Act 2.
- Indicator parameter MBAS was detected in soil in one of the samples analyzed. No impact to nearby surface or groundwater could be expected as a result of this detection;

- Arsenic was detected above its SHS R-U MSC in 28 of the 33 samples analyzed, with a maximum observed concentration of 42.6 mg/kg, which is within the range of naturally-occurring arsenic for soil in the area. The remaining metals analyzed were all at concentrations less than their respective SHS R-U MSCs in all samples; and
- VOCs and SVOCs analyzed were not detected in soil at concentrations above their respective SHS R-U MSCs.

### 3/9 Wellsite

Sampling and analysis of soil from five soil borings (6 samples) and six soil test pits (13 samples) and surface water samples from two locations at the 3/9 Wellsite identified the following:

- Indicator parameters ASTM chloride in soil, ethylene glycol, and MBAS were not detected in any of the six soil boring samples analyzed;
- Arsenic was detected in soil above its SHS R-U MSC in each of the six soil samples from the soil borings, with a maximum observed concentration of 35.6 mg/kg, which is within the range of naturally-occurring arsenic for soil. Manganese ws detected above its SHS R-U MSC in one of six samples. All other metals analyzed were all observed at concentrations less than their respective SHS R-U MSCs for all samples;
- The VOCs detected were present at concentrations below their respective SHS R-U MSCs. No SVOCs were present at concentrations above their respective SHS R-U MSCs;
- Potential constituents on the PA Short List for Diesel were detected in both soil samples from one test pit (P1) at concentrations below their respective SHS R-U MSCs; however, these constituents were not detected in any of the remaining ten soil samples from the surrounding test pits;
- Chloride and TDS were not detected at concentrations above their respective surface water quality criteria in either surface water sample;
- VOCs and SVOCs, and the indicator parameter DRO were not detected in surface water samples above the laboratory reporting limit; and
- Metals were not detected in surface water samples at concentrations above their respective surface water quality criteria.

### Ex. 5 - Personal Privacy 2 Wellsite

Sampling and analysis of soil from two soil borings (2 samples) and 4 test pits (9 samples), and surface water samples from three locations at the [ 2 Wellsite identified the following:

- ASTM chloride in soil, ethylene glycol, MBAS, VOCs, and SVOCs were not detected in either of the two soil samples from the soil test boreholes;
- Diesel constituents on the PA short list for Diesel were not detected above their respective laboratory reporting limits or their respective SHS R-U MSCs in the 9 samples of soil samples from the test pits;
- No metals were detected above their respective SHS R-U MSCs in any of the soil boring samples;
- Chloride and TDS were not detected at concentrations above their respective surface water quality criteria in any of the three surface water samples;
- VOCs and SVOCs, and the indicator parameter DRO were not detected in surface water samples above the laboratory reporting limit; and
- No constituent was detected in surface water above its surface water quality criteria for human health. No constituent was detected above its surface water quality criteria for aquatic life except total aluminum and total iron in the unfiltered sample from the pond. No other metal or other constituent exceeded its surface water quality criteria, as would have been expected to be observed if these results were attributable to drilling activities. The aluminum and iron observations are consistent with expected variability in sediment and surface water quality. The aluminum and iron observations do not indicate impacts related to Cabot's operations at the Lewis 2 Wellsite.

# 5 Wellsite

Sampling and analysis of soil from two soil test borings (2 samples) and surface water samples from three locations (3 samples) at the 5 Wellsite identified the following:

- VOCs and SVOCs, and the indicator parameters ASTM chloride in soil, ethylene glycol, MBAS, were not detected in the two soil samples from the soil test boreholes;
- Arsenic was detected in soil above its SHS R-U MSC in one of the two soil samples analyzed, at a concentration of 14.1 mg/kg. Other metals analyzed were all observed at concentrations less than their respective SHS R-U MSCs.

- VOCs and SVOCs were not detected in surface water samples above the laboratory reporting limit. Metals were not detected in surface water samples at concentrations above the surface water quality criteria;
- Chloride and TDS were not detected at concentrations above their respective surface water quality criteria in any of the three surface water samples; and
- The indicator parameter DRO was detected in one surface water sample (upgradient)
  above the laboratory reporting limit. This finding was for the upstream sample and
  does not indicate any concern related to the Wellsite.

### 6 Wellsite

Sampling and analysis of soil from one test pit (13 samples) and surface water samples from two locations at the Teel 6 Wellsite identified the following:

- Ethylene glycol and regulated petroleum hydrocarbon constituents (combined lists of all PA Short Lists for Petroleum Products) were not detected in any of the 13 soil test pit samples analyzed above the laboratory reporting limit;
- Lead was detected in soil but below its SHS R-U MSC; and
- Constituents on the PA Short List for Diesel were not detected in surface water samples above the laboratory reporting limit.

# 7 Wellsite

Sampling and analysis of soil samples from two soil borings (2 samples) and surface water samples at four locations (4 samples) at the 7 Wellsite identified the following:

- ASTM chloride in soil, ethylene glycol, MBAS, VOCs, and SVOCs were not detected
  in either of the soil boring samples analyzed, with the exception of the VOC acetone
  (which is a common laboratory contaminant). Acetone was present at concentrations
  below its SHS R-U MSC;
- Metals detected in soil were at concentrations below their SHS R-U MSC;
- Chloride and TDS were not detected at concentrations above their respective surface
  water quality criteria in each of the four surface water samples. The pH of the water
  in one of the wetland samples was outside of (lower than) the range of the surface
  water quality criteria for aquatic life, but within the range anticipated for a natural
  wetland environment;
- The indicator parameter DRO and regulated petroleum constituents were not detected in any of the surface water samples above the laboratory reporting limit.

- VOCs and SVOCs were not detected in surface water samples above the laboratory reporting limit, with the exception of bis(2-ethylhexyl) phthalate in one of the samples from the wetland that was detected slightly above the laboratory reporting limit, but did not exceed the surface water quality criteria; and
- No constituents were detected above the surface water quality criteria except total aluminum and total iron in the two samples from the wetlands, which exceeded the surface water quality criteria for aquatic life, and iron in one sample from one of the wetlands, which exceeded the surface water quality criteria for human health. No other metals or other constituents were detected above their surface water quality criteria, as would have been expected had the results been attributable to drilling activities. The aluminum and iron observations are consistent with expected variability in sediment and surface water quality in pond and wetland environments. They do not indicate releases or impacts related to Cabot's operations at the \_\_\_\_\_\_\_ Wellsite.

### 1.0 INTRODUCTION

URS Corporation (URS) was retained to investigate allegations made by Ex. 6 - Personal Privacy
regarding purported environmental impacts to soil and surface water from natural gas drilling
operations conducted by Cabot Oil & Gas Corporation (Cabot) in Springville and Dimock
Townships, Susquehanna County, Pennsylvania. In response to the allegations, Cabot
launched an investigation of the conditions and potential environmental impact of those
conditions at Wellsites identified by [Ex.6-Personal Privacy] As part of the ongoing investigation, Cabot
requested that URS prepare a Work Plan detailing the scope of work designed to evaluate
potential environmental issues that may exist, based on N Ex. 5-Personal Privacy   representations to Cabot
and the Pennsylvania Department of Environmental Protection (PADEP). A Work Plan was
developed based on site meetings led by Ex.6-Personal Privacy and attended by his attorney (Mr.
Paul Schmidt), PADEP (Mike O'Donnell, Eric Rooney, and Sean Robbins), Cabot (Phil
Stalnaker and Phillip Hill), Fulbright & Jaworski L.L.P. (Mr. Ken Komoroski and Ms. Amy
Barrette), and URS held on Friday, December 18, 2009 and on other information as
described in more detail in <b>Section 4.0</b> of this report.
This Work Plan was prepared to allow implementation of soil and water studies. These
studies were then performed by URS to demonstrate that any releases or incidents alleged by Ex.E. Personal Princip were either confirmed or proven not to have occurred and, to the extent that
detectible concentrations of constituents of concern or pollutants were identified, these
constituents were either remediated or confirmed to exist below the established action levels.
Where appropriate, test pits were excavated by URS to demonstrate that areas were
investigated even where Mr. Ely was unsure of the precise locations of alleged incidents.
mivodigated even where this Ely was another of the process resultents of the god moderne.
This report summarizes the results of implementation of the Work Plan developed to address
allegations by N egarding eleven (11) Wellsites in Dimock and Springville Townships,
Susquehanna County, Pennsylvania. Based on our investigation of conditions, it was
decided to do assessment at two additional Wellsites (Ex. 6 - Personal Privacy 1 and 6) unrelated to (ex. 6 - Personal Privacy 2)
to Ex. 6 - Personal Privacy allegations.
Prior to completion of the Work Plan, URS collected two rounds of water and soil samples
near eight (8) of the Wellsites in question. The locations of these samples were based upon

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information available to URS at the time in relation to [Ex.E. Personal Privacy] allegations.

This report summarizes the results of implementation of the Work Plan developed to address allegations by Ex.6-Personal Privacy egarding eleven (11) Wellsites. Other potential releases unrelated to Ex.6-Personal Privacy allegations were also investigated regarding two (2) additional Wellsites (the W. Chudleigh 1 and the Teel 6 Wellsites) operated by Cabot in Dimock and Springville Townships, Susquehanna County, Pennsylvania.

Implementation of the Work Plan involved review of previous reports and sampling of soil and surface water in locations where impacts might be expected to be found had the alleged releases occurred, including drilling and sampling of soil from soil borings, excavation of exploratory test pits and sampling of soil, and collection of surface water samples from streams, wetlands, springs, and ponds near the Wellsites.

### 1.1 OBJECTIVES

The objectives of this investigation included:

- Evaluation of historic reports documenting accidental releases and subsequent reporting, cleanup and Act 2 submittals.
- Evaluation of surface and subsurface soil quality for evidence of impacts that could be attributed to the alleged releases.
- Assessment of the nature of soil and fill on and beneath the surface of the Wellsites for evidence of releases.
- Evaluation of surface water quality for evidence that the alleged releases migrated to or impacted the quality of nearby streams, ponds, and wetlands.
- Review and interpretation of the findings of soil and surface water sampling and analysis relative to the various environmental quality standards promulgated for the specific media sampled.

### 2.0 SCOPE OF WORK PERFORMED

URS investigated soil and surface water quality, in varying combinations, at each of 11 Wellsites in response to allegations made by Ex.6-Personal Privacy that various natural gas well drilling fluids and petroleum products were released to the environment and 2 additional Wellsites based on other information as described in more detail in **Section 4.0** of this report. The Wellsites and pad areas included in this investigation are listed below:

• Ex. 6 - Personal Privacy 1
• Ex. 6 - Personal Privacy 1
• Ex. 6 - Personal Privacy 1
• 1H/5H/7H SE
• 2
• 4/6H
• 2/7H NW
• Ex. 6 - Personal Privacy 3/9
• 15
• 16
• 17

A variety of analytical suites were assigned to each Wellsite investigation based on the nature of the purported releases in order to confirm or refute the presence of the allegedly released substances. Regulated metals and organic compounds were analyzed in addition to a series of indicator parameters that could be attributable to the fluids alleged to have been released. For example, hydraulic fracturing fluids have surfactants added; therefore, analysis for the presence of surfactants (MBAS) as an indicator parameter was performed where such fluids were purported to have been released as an indicator parameter. It should also be noted that MBAS can be associated with other human activities and can also be naturally-occurring. The target analytes are not all regulated with a Medium Specific Concentration (MSC) for human health risk or cleanup; however, each is considered to be an indicator parameter the presence of which at or above threshold concentrations could

indicate that a past release may have occurred, which may require further investigation or evaluation to confirm. The sections that follow describe the allegations made and the scope of investigation conducted in response to each allegation.

URS collected and analyzed field duplicate samples of soil and surface water at selected locations as a quality check on the reproducibility of field sampling and laboratory analytical methods. Where collected, the duplicate sampling and analysis are indicated in the applicable sections below.

For the purposes of completeness and thoroughness of this investigation, Ex.6-Personal Privacy allegations are stated as plainly and as candidly as possible as presented by Ex.6-Personal Privacy

2.1 [Ex. 6. Personal Privacy] Allegation: [Ex. 6. Personal Privacy] Asserts that there is a drill pit that continues to leach black liquid and the pit should have been removed. He alleges that the spring has been contaminated and that fish were killed in a nearby pond.

# 2.1.1 Approach to Investigate Allegations – 1H Wellsite

URS collected surface water samples at two locations and analyzed them for the Extended Analytical Suite (**Appendix A – Table 1**) to evaluate for potential impacts. One catchment basin and the outlet from the adjacent pond (both immediately downgradient of the seep area from the Wellsite) were sampled.

As discussed with PADEP (12/18/09), URS advanced 2 soil test boreholes immediately downgradient of the location of the reserve pit. URS examined and logged the subsurface materials for visible indications of impacts. The soil sample(s) were analyzed for the Pit/Frac Analytical Suite (**Appendix A – Table 2**). Analytical results from soil and surface water sampling were evaluated to address the allegation that materials in the pit could represent an ongoing release to seep and/or the pond.

URS reviewed reports submitted on behalf of Cabot regarding the disposition of the remediation system currently in place at the Wellsite.

## 2.2 Ex.6 - Personal Privacy 1H WELLSITE

and approximately 16,000 gallons came back, and that fluid purportedly ran down the hillside and into a nearby creek. 

[EX. 6 - Personal Privacy] further alleged that there were soap suds in the creek, which [EX. 6 - Personal Privacy] claims to have contained by digging a hole with a bulldozer until the water was "sucked up" and put into frac tanks.

# 2.2.1 Approach to Investigate Allegations – ELE-PROGREPHAN 1H Wellsite

URS dug test pit excavations at 9 locations distributed across the Wellsite and collected 18 soil samples (at 1-2 ft. and 3-4 ft. below ground surface [bgs] at each location). In addition, URS collected surface water samples from the nearby creek located to the north and northeast. Surface water and soil samples were analyzed for the Extended Analytical Suite (Appendix A – Tables 1 and 2, respectively) to evaluate for potential impacts from Wellsite operations.

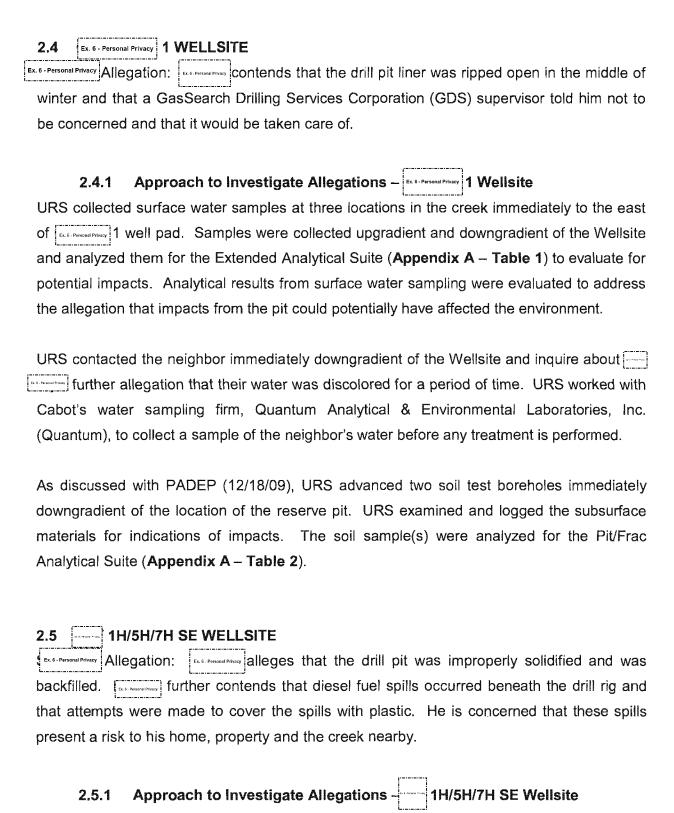
# 2.3 Ex. 6 - Personal Privacy 1 WELLSITE

pit. Interviews with Wellsite personnel identified the material as three truckloads of drilling fluid, not brine, from the Hunsinger well. Tears in the mud pit liner that could have allowed fluids to infiltrate the subsurface were allegedly observed before the drilling fluid was offloaded here.

# 2.3.1 Approach to Investigate Allegations - Ex. 6 - Personal Privacy 1 Wellsite

URS collected surface water samples at two locations and analyzed them for the Extended Analytical Suite (**Appendix A – Table 1**) to evaluate for potential impacts. The most immediate potential downgradient receptor stream was identified and sampled, both upgradient and downgradient of the Wellsite.

URS further evaluated for releases from the drill pit by advancing two soil test boreholes immediately downgradient of the location of the drill pit. URS visually examined and logged the subsurface materials for indication of impacts. The sample(s) were analyzed for the Pit/Frac Analytical Suite (**Appendix A – Table 2**).



URS conducted test pit excavations at four locations distributed across the Wellsite in the reported vicinity of the drill rig and where releases were alleged to have occurred. Eight soil samples were collected (at 1-2 ft. and 3-4 ft. bgs in each test pit) and analyzed for the PA

Short List for Diesel releases (**Appendix A – Table 2**) to evaluate for potential impacts. A visual inspection of this location indicated that there is no creek nearby; however, URS traversed the hillside immediately below the Wellsite to evaluate for seeps.

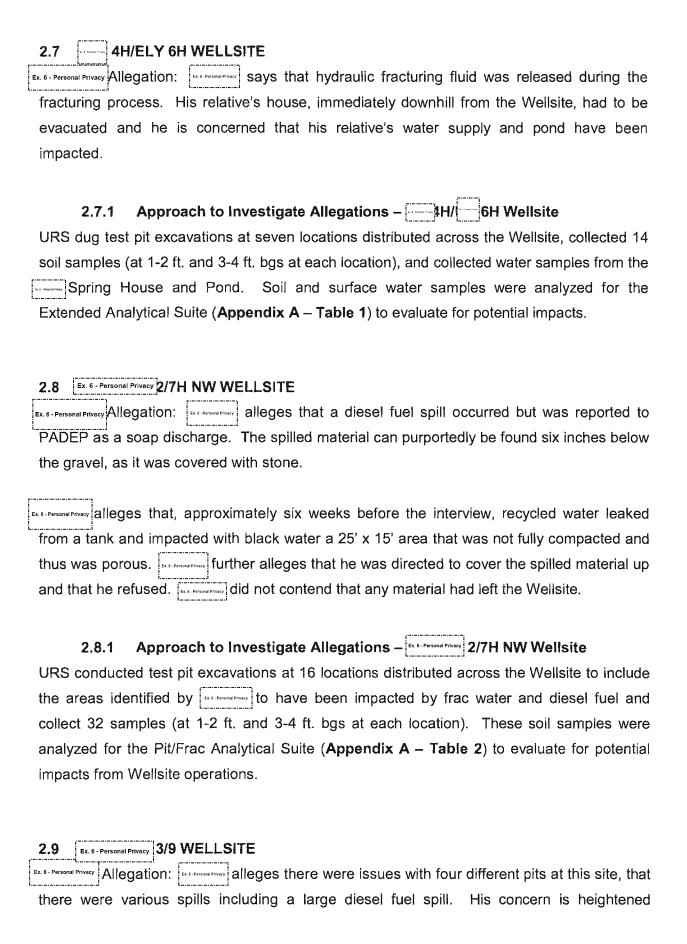
As discussed with PADEP (12/18/09), URS evaluated for releases from the two reserve pits that were closed on the pad by advancing four soil test boreholes immediately downgradient of the location of the reserve pits. URS visually examined and logged the subsurface materials for indications of impacts. The sample(s) were analyzed for the Pit/Frac Analytical Suite (Appendix A – Table 2).

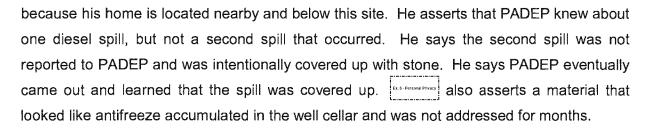
	2 WELLSIT					
Ex. 6 - Personal Privacy	Allegation:	alleges that a GDS supervisor ordered a GDS employee to				
throw stor	nes to punctu	re the reserve pit liner so as to give the appearance that   Ex. 6 - Personal Privacy				
sabotage	d the Wellsite	alleges that the holes in the pit liner allow material from the				
pit to be released through the liner, threatening the spring that is used for drinking and						
bathing.						

# 2.6.1 Approach to Investigate Allegations - 2 Wellsite

URS collected surface water samples at two locations and analyzed them for the Extended Analytical Suite (**Appendix A – Table 1**) to evaluate for potential impacts, one at the spring located upgradient of the Wellsite and one in the creek fed by the spring, downgradient of the Wellsite and immediately to the east of Ely 2 Wellsite. Analytical results from surface water sampling were evaluated to address the allegation that impacts from the pit could have affected the adjacent spring and creek to the east.

As discussed with PADEP (12/18/09), URS evaluated for releases from the drill pit that was closed on the pad by advancing two soil test boreholes immediately downgradient of the location of the drill pit. URS visually examined and logged the subsurface materials for indications of impacts. The sample(s) were analyzed for the Pit/Frac Analytical Suite (Appendix A – Table 2).





also contends there was a pile of dirt mixed with diesel fuel on the back side of the site that remained "all summer long" close to a nearby creek that flows past [Ex.6-Personal Privacy] home. He said PADEP sampled the situation and found diesel fuel and that all the dirt was hauled away thereafter.

# 2.9.1 Approach to Investigate Allegations - Ex. 6-Personal Privacy 3/9 Wellsite

URS collected surface water samples at two locations and analyzed them for the Extended Analytical Suite (**Appendix A – Table 1**) to evaluate for potential impacts. The creek immediately adjacent to the east of the Wellsite, both upgradient and downgradient of the Wellsite was sampled. Analytical results and reports prepared for and by Cabot from previous surface water sampling were evaluated to address the allegation that impacts from the pits could potentially have affected the adjacent creek.

The location PADEP has documented to have diesel fuel impacts (the area between the former location of the drill rig and the former location of the mud pump) was identified and test pit excavations will be dug at six locations placed to target the area of most likely to have been impacted by the alleged release across the identified area. Two samples from each test pit were collected (at 1-2 ft. and 3-4 ft. bgs at each location). These soil samples were analyzed for the PA Short List for Diesel (**Appendix A – Table 2**) to evaluate for potential impacts. The test pits were also visually inspected for evidence of drilling mud.

As discussed with PADEP (12/18/09), URS evaluated for releases from the reserve pit that was closed on the pad by advancing four soil test boreholes immediately downgradient of the location of the reserve pit. URS visually examined and logged the subsurface materials for indications of impacts. The sample(s) were analyzed for the Pit/Frac Analytical Suite (Appendix A – Table 2).

### 2.10 LEWIS 2 WELLSITE

Ex. 6 - Personal Privacy Allegation: [2.6 - Personal Privacy] Allegation: [2.6 - Personal Privacy] asserts that a diesel fuel spill occurred that "laid there all winter" and was reclaimed into the soil bank approximately one year ago when the site was restored to previous grade. [Ex. Personal fronts] feels that several drill pits have been improperly reclaimed and that the liners were carelessly torn in the process of solidifying pit contents.

# 2.10.1 Approach to Investigate Allegations – 2.10.1 Wellsite

URS collected surface water samples at two locations and analyzed them for the Extended Analytical Suite (Appendix A - Table 2) to evaluate for potential impacts from Wellsite operations. The creek immediately to the east of 2 Wellsite, both upgradient and downgradient of the Wellsite, was sampled. Analytical results from surface water sampling in the adjacent creek was evaluated to address the allegation that impacts from the pit could have affected the creek.

The location of the area where the soil that was allegedly impacted with diesel was identified and test pit excavations were conducted at four locations distributed across the identified area with 8 samples collected (at 1-2 ft. and 3-4 ft. bgs at each location). The test pit soil samples were analyzed for the PA Short List for Diesel (Appendix A - Table 2) to evaluate for potential impacts.

As discussed with PADEP (12/18/09), URS evaluated for releases from the reserve pit that was closed on the pad by advancing two soil test boreholes immediately downgradient of the location of the reserve pit. URS visually examined and logged the subsurface materials for indications of impacts. The soil boring sample(s) were analyzed for the Pit/Frac Analytical Suite (Appendix A – Table 2) to evaluate for potential impacts.

2.11 [Ex.6-Personal Privacy] 5 WELLSITE

[Ex.6-Personal Privacy] Allegation: [Ex.6-Personal Privacy] alleges that a spill of diesel fuel occurred and that it was reported to PADEP but the amount was considerably underreported. He asserts that as much as 3,000 gallons was spilled and that it was "all through" the nearby creek area. He further alleges that although the spill occurred in the middle of the night, it was not addressed until 6 a.m. He also asserts that the spill remediation measures were not adequate and that better measures should have been used. He says he believes a GDS supervisor intentionally moved a reference point hay bale so that PADEP would incorrectly obtain a clean post-remediation soil sample. He asserts that diesel fuel can still be found at that site two feet under the soil/rock surface and that it is leaching into Meshoppen Creek.

also alleges that the reserve pit was not properly closed – that despite solidification efforts, material continued to "ooze" out and the pit was covered with twenty to thirty feet of soil when the Wellsite was reclaimed.

# 2.11.1 Approach to Investigate Allegations - 5 Wellsite

URS reviewed reports submitted on behalf of Cabot, including a report prepared by Resource Environmental Management, Inc., 8 Ridge Street, Montrose, PA, which was submitted to the PADEP for the Property. (Notice was published in the PA Bulletin on October 11, 2008).

URS prepared an Act 2 Final Report that evaluated the diesel release that occurred on June 3, 2008, the remediation to address impacts, and demonstrated attainment with the SHS R-U MSCs for the PA Short List for Diesel for the Site. URS re-evaluated the results and conclusions of this report as part of this report addressing (Ex.5-Personal Privacy) allegations.

URS collected surface water samples at three locations: Meshoppen Creek, both upgradient and downgradient of the Wellsite; and the pond immediately downgradient of the Wellsite. These samples were analyzed for the Extended Analytical Suite (**Appendix A – Table 1**) to evaluate for potential impacts. Analytical results from surface water sampling will be evaluated to address the allegation that impacts from the pit could have affected Meshoppen Creek and the nearby pond.

As discussed with PADEP (12/18/09), URS evaluated for releases from the reserve pit that was closed on the pad by advancing two soil test boreholes immediately downgradient of the location of the reserve pit. URS visually examined and logged the subsurface materials for indications of impacts. The samples were analyzed for the Pit/Frac Analytical Suite (Appendix A – Table 2) for evidence of impacts.

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# 2.12 E. 1 - Personal Primery 6 WELLSITE

As a result of Cabot's additional investigation, interviews with GDS personnel indicated that a drum containing petroleum products and antifreeze was buried at a location on the drill pad and subsequently excavated and removed from the location; however, the excavated drum allegedly contained only a portion of the material present when the drum was buried. This material in the subsurface could potentially enter Meshoppen Creek.

# 2.12.1 Approach to Investigate Allegations – 6 Wellsite

URS interviewed multiple GDS employees to evaluate for the location at which the drum was allegedly buried before it was excavated and removed from the Wellsite. Once the burial location was identified, URS excavated a large test pit and collected 12 samples (four at 1-2 ft. bgs, four at the approximate depth of alleged burial of the drum, and four at 1-2 ft. below the approximate depth of alleged burial of the drum). These soil samples were analyzed for a list of parameters consisting of the PA Short List of Petroleum Products (**Appendix A** – **Table 2**) and ethylene glycol, to evaluate for potential impacts.

URS also collected surface water samples at two locations on Meshoppen Creek, one upgradient and one downgradient of the Wellsite. These samples were analyzed for parameters on the PA Short List of Petroleum Products (**Appendix A – Table 2**). Analytical results from sampling were evaluated to address the concern that the buried drum could potentially have released material both to the subsurface and Meshoppen Creek.

# 2.13 TWELLSITE [Ex. 6 - Personal Privacy] Allegation: Ex. 6 - Personal Privacy] Allegation: Ex. 6 - Personal Privacy] alleges that the drill pit was not properly closed and that materials continued to ooze out. He expressed concern for sinking into the area where the pit is located and that materials could contaminate Meshoppen Creek.

# 2.13.1 Approach to Investigate Allegations – 7 Wellsite

URS collected surface water samples at three locations: Meshoppen Creek, both upgradient and downgradient of the Wellsite; and the wetland immediately downgradient of the Wellsite, and analyzed them for the Extended Analytical Suite (**Appendix A – Table 1**) to evaluate for potential impacts. Analytical results from surface water sampling were evaluated to address

the allegation that impacts from the pit could have affected Meshoppen Creek and the nearby wetland.

As discussed with PADEP (12/18/09), URS evaluated for releases from the reserve pit that was closed on the pad by advancing two soil test boreholes immediately downgradient of the location of the reserve pit. URS visually examined and logged the subsurface materials for indications of impacts. The samples were analyzed for the Pit/Frac Analytical Suite (Appendix A – Table 2) to evaluate for potential impacts.

### 3.0 FIELD PROCEDURES

Soil test boreholes to evaluate for impacts from drill pits that are alleged to have been closed improperly were conducted at eight Wellsites and test pit excavations were dug and sampled at seven Wellsites. This assessment included the drilling of 25 soil test boreholes and excavation of 47 test pits.

### 3.1 SOIL BORING INSTALLATION AND SOIL SAMPLING METHODS

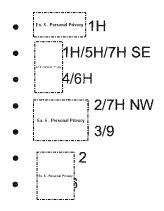
Boreholes were located immediately downgradient of the reserve pit or otherwise as described in **Section 4.0** below. Soil borings were advanced at each of the Wellsites listed below.

- E.G. Prisonal Privacy 1
- 1H/5H/7H SE
- 4/6H
- ( 2/7H NW
- Gesiora 3/9
- Ex. 8 Personal Privacy 2
- 5

Boreholes were advanced to a depth of approximately 12 feet bgs, with the uppermost 4 feet being drilled with hollow-stem augers through the Wellsite and the remaining 8 feet being cored using direct push technique. Direct push drilling involves the use of a pneumatic hammer that drives a 4-foot long by 2-inch outside diameter hollow core barrel into the subsurface. A continuous core was collected with dedicated acetate sleeves when drilling with direct push methods. The character of the soil recovered was logged, screened for the presence of VOC using a photo-ionization detector, and the appropriate interval sampled for laboratory analysis. Where no visible impacts were present, the lowermost portion of the borehole was sampled. At a minimum, one soil sample was collected per location, taken below the reported depth of the former drill pit (where impacts from the drill pit would be most likely to occur). The specific methods used at each of the above Wellsites are described in **Section 4.0**.

### 3.2 TEST PIT INSTALLATION AND SOIL SAMPLING METHODS

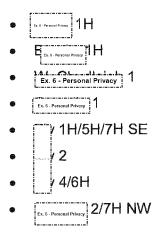
Exploratory test pits were excavated at seven Wellsite locations:



Each test pit was excavated with a rubber-tire backhoe to depths of 4 to 5 ft. bgs. Two or three samples were collected within each exploratory test pit. Samples were obtained from excavated material, undisturbed soil, or fill along the sidewall or base of the pit as applicable. Sample intervals were selected to target the materials alleged by sample. Each test pit was backfilled with the excavated spoil at the completion of sampling.

### 3.3 SURFACE WATER SAMPLING METHODS

Surface water samples were collected at 13 Wellsites to evaluate water quality both upgradient to and downgradient of purported releases. Samples were collected in association with the following Wellsites:



- Ex. 6 Personal Privacy 3/9
   Lat- Invatations 2
- Ecs-Person Princip
- 7

Surface water samples were collected from the stream upgradient to and downgradient from the alleged area of release directly into laboratory supplied containers with the appropriate chemical preservatives for the required analytical methods. Samples were placed in coolers and stored on ice until delivered under chain of custody documentation to the analytical laboratory.

### 3.4 SAMPLE COLLECTION AND LABORATORY ANALYSIS

Samples were collected in laboratory-supplied containers appropriate for the intended suite of analytical parameters. The aliquots for analysis of volatile organic compounds (VOCs) content were field preserved using US EPA Method 5035. Chemical preservatives, where required for each analytical method, were supplied by the laboratory. Samples were analyzed for one of four analytical suites (Extended Analytical Suite, Pit/Frac Analytical Suite, Diesel Fuel Short List, and Petroleum Short List) based on the nature of the alleged release(s). The analytes in each of the analytical suites are detailed in **Appendix A – Table 1 (water) and Table 2 (soil)**. Sample containers were labeled with a unique sample identification, the time and date of collection, and the sampler's initials. Samples were stored on ice in laboratory-supplied coolers in the possession of the URS professionals until sealed for shipment to the laboratory. Laboratory analyses were contracted to Pace Analytical Laboratories, Inc., of Greensburg, Pennsylvania, a NELAC-certified and PADEP-accredited environmental laboratory.

### 4.0 SITE ASSESSMENT AND FINDINGS

Descriptions of the specific investigative procedures and findings from each of the Wellsite locations included in this assessment, including location identifications, rationale for selecting each location, and the results of sampling and laboratory analysis at each, are provided in the following sections. Samples were collected using the techniques described in Section 3.0 above. Sample locations were selected based on the nature of the allegations and the appropriate manner to adequately address the purported releases at each individual Wellsite based on the December 18, 2009, Site Visit with [Els. Proceedings] and representatives from PADEP, Cabot, Fulbright & Jaworski L.L.P., and URS. In certain circumstances, systematic random sampling was performed in lieu of, or in conjunction with, targeted sampling, to allow for an attainment demonstration under an Act 2 statistical method.

The results of soil sampling were compared to the standards promulgated under Pennsylvania Act 2 (The Land Recycling and Remediation Standards Act, Title 25, Chapter 250 et seq.). URS compared the soil results to the most conservative medium-specific concentration (MSC), which is the Statewide Health Standard (SHS) for Residential-Used aquifer (RU) conditions. The SHS R-U MSC is a conservative, health-based, maximum concentration in soils and groundwater consistent with unrestricted future use for residential purposes, without need for removal of materials and without engineering or institutional controls.

The results of surface water sampling were compared to numerical concentrations from Pennsylvania's surface water quality criteria adopted by PADEP codified in Title 25, Chapter 93, of the Pennsylvania Code. PADEP uses these concentrations to help evaluate whether surface water the State, over time and multiple sampling events and locations, supports existing and designated uses of the water for aquatic life and human activity. The data PADEP uses for this evaluation is collected through a comprehensive monitoring plan that integrates several monitoring designs (e.g., fixed station, intensive and screening-level monitoring, rotating basin, judgmental and probability design) and probability-based networks at the watershed or state level to support statistically valid inferences about the condition of various surface water types, over time. When a surface water sample from a discrete

location at a given point exceeds an surface water quality criteria, it does not necessarily mean that the surface water is impaired for a given use.

The observed range of concentrations of aluminum and iron in surface water samples collected from streams in the vicinity of the Wellsites is consistent with expected variability in sediment and surface water quality for streams near the study area, but removed from oil and gas development activities, as reflected in data collected by the U.S. Geological Survey (USGS). USGS data for total aluminum ranges from not detected at the laboratory reporting limit to 6,600 ug/L. USGS for total iron ranges from not detected at the laboratory reporting limit to 325,000 ug/L. Samples collected as part of this investigation from streams observed concentrations of total aluminum ranging from not detected at the laboratory reporting limit up to 3,110 ug/L and for total iron from not detected at the laboratory reporting limit up to 3,120 ug/L. The observed results do not indicate a release or impacts to streams related to Cabot's drilling activity at any Wellsite.

Concentrations of total aluminum and total iron observed in wetland environments and ponds sampled as part of this investigation observed total aluminum and total iron concentrations that range higher than in the streams sampled, but are still within the anticipated range of concentrations for the pond and wetland environments. In ponds and wetlands, aluminum and iron concentrations often vary widely due to a variety of naturally-occurring detritus and humic material that collects in areas of standing water and variables such as depth, rainfall, use, turbidity, and water chemistry. As discussed in more detail below with respect to each Wellsite, the observed results do not indicate a release or impacts to ponds or wetlands related to Cabot's drilling activity at any Wellsite 1H WELLSITE

URS drilled two soil borings, sampled soil from these two boreholes, collected surface water samples at two locations, one from a catchment basin and the other from an outlet from the adjacent pond (both immediately downgradient of the seep area from the Wellsite), and evaluated soil quality in the area at the groundwater seep that exists on the hillside south and below the 1H Wellsite (Figure 4.1-1).

# 4.1.1 1H Wellsite Soil Boring Installation and Rationale

Two soil borings were drilled and sampled adjacent to the reserve pit. The locations were placed to target the presumed downgradient side as near as practicable to the edge of the pit based on the limits as defined by the Cabot superintendent. **Figure 4.1-2** shows the

locations of the soil borings relative to the reserve pit. One sample was collected from each boring for laboratory analysis of the Pit/Frac suite of constituents (**Appendix A – Table 2**).

# 4.1.2 1H Wellsite Surface Soil Sampling and Rationale

URS collected 12 surface soil samples within the area of the seep on the slope below the Wellsite (Figure 4.1-3). These samples were analyzed for Target Analyte List (TAL) Metals. Systematic Random Sampling was performed by generating a random sampling grid and sample locations using the PADEP-developed sysrandsamp3dnn.xls spreadsheet program. A copy of the spreadsheet output used in this effort is included in Appendix B. Random sampling was performed to allow for an attainment demonstration of an Act 2 standard for the drilling mud release on the

#### 4.1.3 1H Wellsite Surface Water Sampling and Rationale

Two surface water samples were collected; one at the catchment basin and one at the outlet from the adjacent pond at the base of the slope below the \_\_\_\_\_ 1H Wellsite (**Figure 4.1-4**). Each sample was submitted for laboratory analysis of the Pit/Frac suite of constituents.

# 4.1.4 1H Wellsite Soil Quality Results and Comparison to Standards

The results of soil quality analyses for Black 1H soil boring samples are provided on **Table 4.1-1**. A number of metals were present at concentrations above laboratory reporting limits; however, none of those detected were at concentrations in excess of their respective SHS R-U MSCs. Acetone (which is commonly associated with field sample preservation and laboratory handling) was the only VOC detected at a concentration below its SHS R-U MSC. No Semi-Volatile Organic Compounds (SVOCs) were present above laboratory reporting limits.

The analytical results from the 12 systematic random surface soil sample locations from the seep south of the Wellsite are presented on **Table 4.1-2**. Of the 25 metals analyzed, 21 metals were present at concentrations above the laboratory reporting limit. Of these, only arsenic and manganese were detected at a concentrations in excess of their respective SHS R-U MSC, in samples BLK1H-7 and BLK1H-9 for arsenic and BLK1H-6 and BLK1H-9 for manganese. The arsenic and manganese concentrations in samples were less than 10-times their respective residential, used aquifer MSC. Thus, the systematic random sampling

results demonstrate attainment of the SHS R-U MSCs for Target Analyte (TAL) Metals and lithium under the 75%-10X rule (PA Title 25 §250.707(b)(1)(i)), which states that the SHS-R-U is attained when 75% or more of randomly located samples meet their respective SHS and no sample exceeds its SHS by more than ten times.

# 4.1.5 Lt. a. Personal Princety 1H Wellsite Surface Water Quality Results and Comparison to Standards

Surface water quality sample laboratory results are presented on **Table 4.1-3**. None of the VOCs and SVOCs analyzed were detected above the laboratory reporting limit for any compound in either the downgradient or the side-gradient samples at [11] 1H Wellsite. Total metals analyses identified detectible concentrations of nine metals (aluminum, barium, calcium, iron, magnesium, manganese, potassium, sodium, and zinc). Seven metals were also detected in the dissolved (filtered) portion of the sample (barium, calcium, magnesium, manganese, molybdenum, potassium, and sodium). None of these metals were present at a concentration above the surface water quality criteria except for total aluminum in one of the two downgradient samples (759 ug/L observed vs 750 ug/L surface water quality criteria for aquatic life). Dissolved aluminum in this sample was not detected at the laboratory reporting limit.

The indicator constituents Chloride and TDS were not present at concentrations above their respective surface water quality criteria in either sample. Indicator parameters DRO and MBAS were not detected in either sample. None of the indicator constituents analyzed were detected at a concentration above its respective-surface water ambient water quality criteria.

# 4.2 Ex. 6 - Personal Privacy 1H WELLSITE

URS sampled soil from each of nine exploratory test pits at the [1.1. Proposed] 1H Wellsite (**Figure 4.2-1**). Sampling was performed to evaluate possible impacts from a purported drilling fluids release to the surface on the Wellsite and to the north and northwest. In addition, URS collected surface water samples from the nearby creek located to the north and northeast.

#### 4,2,1 Ex.6. Personal Privacy 1H Wellsite Test Pit Excavation and Rationale

Five test pits were excavated and sampled north and east, downhill from the Wellsite, and four were excavated and sampled from the areas immediately to the east and south of the

well head. **Figure 4.2-2** shows the layout of the sampling locations. The rationale and purpose for selecting the sampling locations is as follows:

est Pit ID	Location	Rationale
k-1H-P1	Behind (upstream of) temporary cofferdam in drainage swale north of Wellsite	Evaluate soil quality where fluid could accumulate
-1H-P2	Within constructed swale northeast of Wellsite where fluids were allowed to accumulate for removal	Evaluate soil quality where fluid could migrate
(-1H-P3	At confluence of drainage from cofferdam and constructed swale	Evaluate soil quality at fluid recovery point
(-1H-P4	Within constructed swale east of Wellsite	Evaluate soil quality at fluid recovery point
-1H-P5	Within constructed swale east of Wellsite	Evaluate soil quality at fluid recovery point
-1H-P6	On pad southeast of well head	Evaluate soil quality near location of purported release
-1H-P7	On pad east of well head	Evaluate soil quality near location of purported release
-1H-P8	On pad southwest of well head	Evaluate soil quality near location of purported release
-1H-P9	On pad west of well head	Evaluate soil quality near location of purported release

Each test pit was excavated to approximately 4 ft. bgs. The materials encountered beyond the limit of the Wellsite (in test pits 1H-P1 through -P5) consisted of native red silty clay with gravel and cobbles. Materials encountered beneath the Wellsite proper were a mixture of reworked fill and native materials of similar character. Two samples were collected from each test pit; one from 1.5 to 2 ft. bgs and a second from 3.5 to 4 ft. bgs. Each soil sample was submitted for analysis of the Extended Analytical Suite (**Appendix A – Table 2**).

#### 4.2.2 Ex. 6 - Personal Privacy 1H Wellsite Surface Water Sampling and Rationale

URS collected surface water samples from the nearby creek located to the north and northeast at the locations shown on **Figure 4.2-3**. Locations were chosen so as to provide water quality data upstream and downstream of the point where the release would have entered the creek. Surface water samples were analyzed for the Extended Analytical Suite (**Appendix A – Table 1**).

#### 4.2.3 Ex.6-Personal Privacy 1H Wellsite Soil Quality Results and Comparison to Standards

The results of soil quality analyses for [1.5. Personal Prince] 1H soil samples are provided on **Table 4.2-1**. The VOCs 2-butanone, acetone (likely laboratory contaminant), and toluene were detected but at concentrations below their respective SHS R-U MSC in three of the 18 soil samples analyzed (with the exception of acetone a suspected laboratory contaminant). In each case, the VOCs were detected in the near-surface sample but not in the corresponding subsurface sample. A number of TAL Metals were present but none were detected at concentrations above their respective SHS R-U MSCs. No SVOCs were detected above the respective laboratory reporting limits. None of the soil constituents analyzed were detected at a concentration above its respective SHS R-U MSC.

# 4.2.4 Ex.6-Personal Privacy 1H Wellsite Surface Water Quality Results and Comparison to Standards

Surface water quality sample laboratory results are presented on **Table 4.2-2**. None of the VOCs and SVOCs analyzed were detected above the laboratory reporting limit for any compound in either the upstream or downstream sample at the the laboratory reporting limit for any compound in either the upstream or downstream sample at the laboratory reporting limit for any compound in either the upstream or downstream sample at the laboratory reporting limit for any compound in either the upstream or downstream sample at the laboratory reporting limit for any compound in either samples detected limit the dissolved concentrations of eight metals (aluminum, barium, calcium, iron, magnesium, manganesium, manganese, potassium, and sodium). Seven of these metals were present at a concentration above the surface water quality criteria. Chloride and TDS were present in both samples but at concentrations below the surface water quality criteria. DRO were not detected in either sample. None of the surface water constituents analyzed were detected at a concentration above the surface water ambient water quality criteria concentration.

#### 4.3 Ex. 6 - Personal Privacy 1 WELLSITE

URS drilled two soil borings and sampled soil from these two boreholes at the Ex. 6 - Personal Privacy

1 Wellsite (Figure 4.3-1). In addition, URS collected surface water samples at two locations, one upgradient to, and one downgradient of the Wellsite.

#### 4.3.1 Ex. 6 - Personal Privacy 1 Wellsite Soil Boring Installation and Rationale

The two soil borings were located adjacent to the reserve pit and targeted to the presumed hydraulically downgradient side, as near as practicable to the edge of the pit based on the limits as defined by the Cabot superintendent. **Figure 4.3-2** shows the locations of the soil borings relative to the reserve pit. One sample was collected from each boring for laboratory analysis of the Pit/Frac suite of constituents (**Appendix A – Table 2**).

# 4.3.2 Ex. 6 - Personal Privacy 1 Wellsite Surface Water Sampling and Rationale

URS collected surface water samples from the nearby creek located to the north and northeast at the locations shown on **Figure 4.3-3**. Locations were chosen so as to provide water quality data upstream and downstream of the point where the release would have entered the creek. Surface water samples were analyzed for the Extended Analytical Suite (**Appendix A – Table 1**).

# 4.3.3 Ex. 6 - Personal Privacy 1 Wellsite Soil Quality Results and Comparison to Standards

The results of soil quality analyses for Ex.6-Personal Privacy 1 soil samples are provided on **Table 4.3-1**. None of the VOCs or SVOCs or indicator parameters MBAS, ASTM chloride in soil, and ethylene glycol were detected at concentrations above their respective laboratory reporting limits. A number of metals were detected but none were at concentrations above their respective SHS R-U MSCs.

# 4.3.4 Ex. 6 - Personal Privacy 1 Wellsite Surface Water Quality Results and Comparison to Standards

Surface water quality sample laboratory results are presented on **Table 4.3-2**. None of the VOCs and SVOCs and indicator parameters MBAS, chloride, and ethylene glycol were detected above the laboratory reporting limit for any constituent in either the upstream or downstream sample at <a href="Ex.6-Personal Privacy">Ex.6-Personal Privacy</a> 1. Total metals analyses identified detectible concentrations of nine metals (aluminum, barium, calcium, iron, magnesium, manganese, potassium, silver, and sodium). Seven of these metals were also detected in the dissolved (filtered) portion of the sample (barium, calcium, iron, magnesium, manganese, potassium, and sodium). Chloride and TDS were present in both samples but at concentrations below their surface water quality criteria. DRO were not detected in either sample.

No constituent was detected in surface water above its respective surface water quality criteria for human health. No constituent was detected above its respective surface water quality criteria for aquatic life except total aluminum and total iron in an unfiltered, downgradient stream sample (and with respect to total iron, only if it is assumed that the one-time result was representative of the 30-day average—see footnote 4 of Table 4.3-2). Dissolved aluminum was not detected above the laboratory reporting limit, dissolved iron was significantly below the human health criteria concentration, and no other metals or other constituents were detected above their surface water quality criteria as would have been expected to be observed if the aluminum and iron observations were attributable to drilling activities. These results indicate that the observed total aluminum and iron concentrations are associated with sediment collected from the stream. The aluminum and iron observations are consistent with expected variability in sediment and surface water quality in stream samples. They do not indicate impacts related to Cabot's operations at the W.

#### 4.4 Ex. 6 - Personal Privacy 1 WELLSITE

URS drilled two soil borings and sampled soil from these two boreholes at the [E.S.-Personal Privacy] 1 Wellsite (Figure 4.4-1). In addition, URS collected surface water samples at three locations. One sample was collected in a pond downhill of the Wellsite, and two samples were collected in the creek immediately to the east of [E.S.-Personal Privacy] Wellsite, one upgradient and one downgradient of the Wellsite.

#### 4.4.1 Ex.6-Personal Privacy 1 Wellsite Soil Boring Installation and Rationale

The two soil borings were located east of the reserve pit and targeted to the presumed hydraulically downgradient side as near as practicable to the edge of the pit based on the limits as defined by the Cabot superintendent. Borings locations required avoidance of the pipeline immediately east of the reserve pit. **Figure 4.4-2** shows the locations of the soil borings. One sample was collected from each boring for laboratory analysis of the Pit/Frac suite of constituents (**Appendix A – Table 1**).

#### 4.4.2 Ex. 6-Personal Privacy 1 Wellsite Surface Water Sampling and Rationale

The surface water samples were obtained at three locations immediately to the east and north of [Ex.6-Personal Privacy] 1 well pad (**Figure 4.4-3**). One sample was collected in the stream upgradient of the Wellsite, one from the pond at the base of the slope immediately northeast of the Wellsite, and the third from the stream downgradient of the Wellsite, and each sample was analyzed for the Extended Analytical Suite (**Appendix A – Table 2**). Locations were selected to evaluate for potential impacts of drilling constituents to the stream and pond.

#### 4.4.3 Ex.6-Personal Privacy 1 Wellsite Soil Quality Results and Comparison to Standards

The results of soil quality analyses for [Ex. 6-Personal Privacy] IH soil samples are provided on **Table 4.4-1**. With the exception of acetone (which is commonly associated with field sample preservation and laboratory handling), none of the organic constituents analyzed were present at concentrations above its respective laboratory reporting limit. A number of metals were detected; however, arsenic (12.5 mg/kg) was present in one of two samples at a concentration above its SHS R-U MSC (12 mg/kg), which is within the range of naturally-occurring arsenic for soil in the area.

# 4.4.4 Ex.6-Personal Privacy 1 Wellsite Surface Water Quality Results and Comparison to Standards

Surface water quality sample laboratory results are presented on **Table 4.4-2**. None of the VOCs, and SVOCs and indicator parameters MBAS and ethylene glycol, were detected above the laboratory reporting limit for any constituent in any of the three samples at the standard limit. Total metals analyses identified detectible concentrations of 12 metals (aluminum, barium, calcium, copper, iron, lead, magnesium, manganese, potassium, sodium, vanadium and zinc). Barium, calcium, iron, magnesium, manganese, potassium and sodium were detected in the dissolved (filtered) portion of the sample. Chloride and TDS were present in both samples but at concentrations below their surface water quality criteria. Petroleum hydrocarbons were not detected in any sample by any of the test methods used.

No constituent was detected in surface water above its surface water quality criteria for human health. No constituent was detected above its surface water quality criteria for aquatic life except total aluminum and total iron in the unfiltered sample from the pond (and with respect to total iron, only if it is assumed that the one-time result was representative of

the 30-day average). Dissolved aluminum was not detected above the laboratory reporting limit, dissolved iron was below the human health concentration, and no other metals or other constituents exceeded their surface water quality criteria as would be expected to be observed if attributable to drilling activities. These results indicate that the observed aluminum and iron concentrations are associated with sediment collected from the pond. Concentrations of total aluminum and total iron observed in wetland environments and ponds in the vicinity of the Wellsite sampled as part of this investigation observed total aluminum and total iron within the anticipated range of concentrations for the pond and wetland environments. In ponds and wetlands, aluminum and iron concentrations often vary widely and range higher than in streams due to a variety of naturally-occurring detritus and humic material that collects in areas of standing water and variables such as depth, rainfall, use, turbidity, and water chemistry. The aluminum and iron observations do not indicate impacts related to Cabot's operations at the [ILLE-Promost Promost 1] Wellsite

### 4.5 Li Politikon 1H/5H/7H SE WELLSITE

URS drilled four soil borings, excavated four exploratory test pits, and sampled soil from each at the \_\_\_\_\_1H/5H/7H SE Wellsite. Sampling was performed to evaluate for possible impacts from purported releases of drilling fluids and a purported release of diesel fuel to the surface on the Wellsite. The location of the \_\_\_\_\_\_1H/5H/7H SE Wellsite is presented on Figure 4.5-1.

# 4.5.1 1H/5H/7H SE Wellsite Soil Boring Installation and Rationale

The four soil borings were located adjacent to the reserve pit and targeted to the topographic and presumed hydraulically downgradient side, as near as practicable to the edge of the pit based on the limits as defined by the Cabot superintendent. Borings B2 and B3 were located at the eastern edge of the Wellsite between the reserve pit and the steep slope formed by the filled edge of the Wellsite. Borings B1 and B4 were located at the southern and northern ends, respectively, of the reserve pit. **Figure 4.5-2** shows the locations of the soil borings relative to each reserve pit.

The materials encountered included reworked native silt, clay gravel and cobble placed to level the Wellsite area. Borings were advanced to a depth of about 12-13 ft. bgs. One sample was collected from each boring for laboratory analysis of the Pit/Frac suite of constituents (Appendix A – Table 2).

4.5.2 1H/5H/7H SE Wellsite Test Pit Excavation and Rationale  The four test pit locations were selected to target the area immediately east of the Ely 1H well and south of the 5H well where the diesel fuel release from the drilling rig purportedly occurred. Figure 4.5-2 shows the locations of the test pits evacuated at the SE Wellsite.
Each test pit was excavated to approximately 4 ft. bgs. The materials encountered consisted cobble and boulder fill with reworked native soil. Two samples were collected from each test pit; one from 1.5 to 2 ft. bgs and a second from 3.5 to 4 ft. bgs. Each soil sample was submitted for analysis of the PA Short List for Diesel ( <b>Appendix A – Table 2</b> ).
One sample 5-P2B) was collected in with a field duplicate 5-P2C) for quality assurance purposes.
4.5.3 1H/5H/7H SE Wellsite Soil Quality Results and Comparison to Standards
The results of soil quality analyses for Ely 1H/5H/7H SE Wellsite soil samples from soil test boreholes are provided on <b>Table 4.5-1</b> . None of the metals detected were present at concentrations above their respective SHS R-U MSCs. The only VOCs and SVOCs detected, 2-butanone, toluene, and m- and p-cresols, were present at concentrations below their respective SHS R-U MSC. Acetone was detected in each soil boring sample below its SHS R-U MSC; however, acetone is a common laboratory contaminant. Indicator
parameters ASTM chloride in soil and MBAS were present above their respective laboratory reporting limit concentration in one (B3) of the four soil boring samples.

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# 4.5.4 1H/5H/7H SE Wellsite Hillside Reconnaissance URS personnel traversed the hillside to the east of (and below) the Wellsite for evidence of groundwater seeps or springs that could provide evidence of discharges from the reserve pit

groundwater seeps or springs that could provide evidence of discharges from the reserve pit or other drilling operations. Four traverse lines oriented parallel to the eastern edge of the Wellsite were walked by two URS professionals. Traverses were spaced approximately 100 to 150 feet apart with each professional taking a different path along the traverse. Outcrops and low areas along the hillside were closely inspected for evidence of groundwater seepage. URS did not observe any areas where groundwater was discharging to the surface.

### 4.6 2 WELLSITE

URS drilled two soil borings and sampled soil from these two boreholes at the \_\_\_\_2 Wellsite (Figure 4.6-1). In addition, URS collected surface water samples at two locations.

# 4.6.1 2 Wellsite Soil Boring Installation and Rationale

The two soil borings were located adjacent to the reserve pit and targeted to the presumed hydraulically downgradient side as near as practicable to the edge of the pit based on the limits as defined by the Cabot superintendent. Figure 4.6-2 shows the locations of the soil borings relative to the reserve pit. One sample was collected from each boring for laboratory analysis of the Pit/Frac suite of constituents (Appendix A – Table 2).

## 4.6.2 2 Wellsite Surface Water Sampling and Rationale

URS collected two surface water samples in the vicinity of the 2 Wellsite. One sample was collected from the spring located upgradient of the Wellsite and the second sample was collected from the creek formed by the spring, downgradient of the Wellsite and immediately to the east-southeast of 2 Wellsite (**Figure 4.6-3**). Samples were analyzed for the Pit/Frac suite of constituents (**Appendix A – Table 1**).

# 4.6.3 2 Wellsite Soil Quality Results and Comparison to Standards

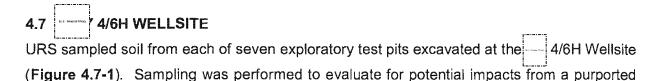
The results of soil quality analyses for 2 soil samples are provided on **Table 4.6-1**. The VOCs acetone (a common laboratory contaminant) and 2-butanone were present at concentrations below their respective SHS R-U MSCs. A number of metals were present but

at concentrations below their respective SHS R-U MSCs with the exception of arsenic, which was observed at concentrations above the SHS R-U MSC, but within the range of naturally occurring background concentrations observed in the area. Indicator parameters ASTM chloride in soil, MBAS, and ethylene glycol were not detected at their respective laboratory reporting limits.

#### 4.6.4 2 Surface Water Quality Results and Comparison to Standards

Surface water quality sample laboratory results are presented on **Table 4.6-2**. The indicator parameter MBAS, along with the VOCs and SVOCs analyzed were not detected above their respective laboratory reporting limit for any constituent in any of the three samples at the Ely 2/5H Wellsite. Total metals analyses identified detectible concentrations of 11 metals (aluminum, barium, cadmium, calcium, iron, lead, magnesium, manganese, potassium, sodium, and zinc). Barium, calcium, magnesium, manganese, potassium, and sodium were detected in the dissolved (filtered) portion of the sample. Chloride and TDS were not detected at concentrations above the respective human health surface water quality criteria in either sample. DRO were not detected in any sample by any of the test methods used. None of the surface water chemistry parameters analyzed were detected at a concentration above its respective surface water quality criteria, except for aluminum and iron in the downstream stream sample, as discussed below.

No constituent was detected in surface water above the surface water quality criteria for human health for the constituent. No constituent was detected above its surface water quality criteria for aquatic life except total aluminum and total iron in the unfiltered downgradient stream sample. Aluminum and iron were not detected at the laboratory reporting limit and no other constituents exceeded the surface water quality criteria as total recoverable, as would have been expected to be observed if these results were attributable to drilling activities. These results indicate that the observed total aluminum and total iron concentrations are associated with sediment collected from the stream. The aluminum and iron observations are consistent with expected variability in sediment and surface water quality. They do not indicate impacts related to Cabot's operations at the Ely 2 Wellsite.



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hydrofracturing fluid release to the surface and to the north and northwest of the Wellsite. Two surface water samples were also collected and analyzed; one from the house and one from the adjacent Pond.

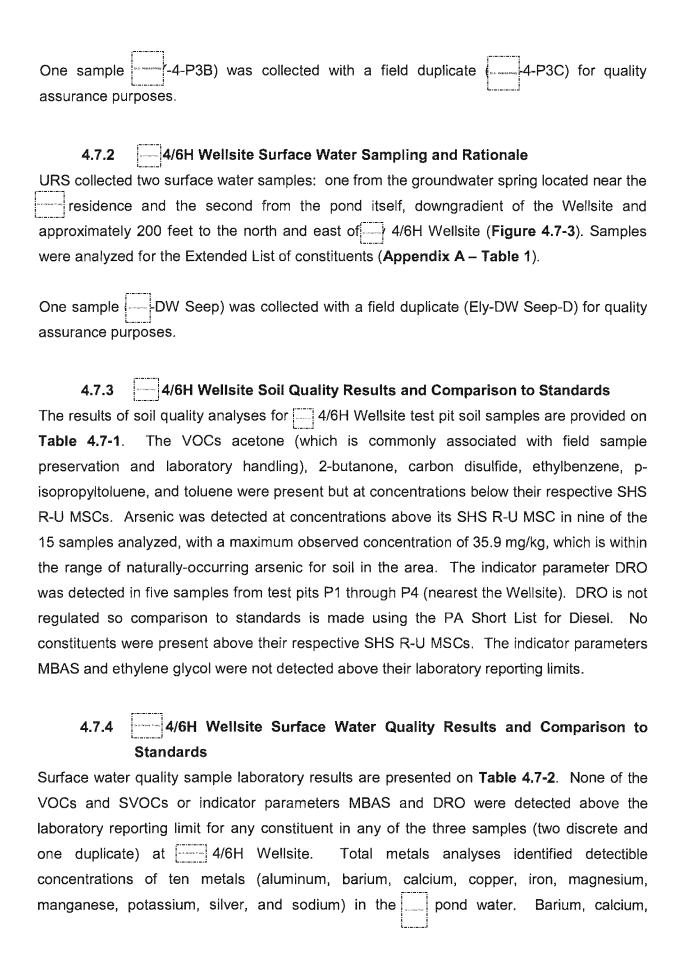
#### 4.7.1 4/6H Wellsite Test Pit Excavation and Rationale

Four soil test pits were targeted to the areas on and immediately northwest of the Wellsite, and three were excavated and sampled further downhill from the Wellsite toward the northeast (**Figure 4.7-2**). The rationale for selecting the sampling locations is as follows:

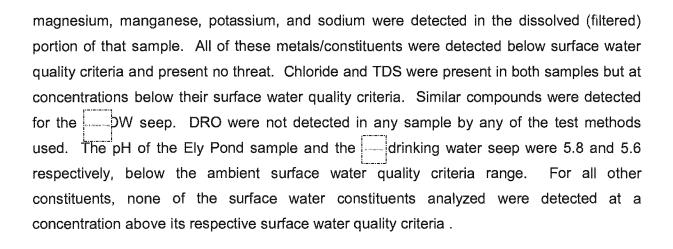
est Pit ID	Location Rationale	Purpose
4-P1	Northwest of well ELY 4 near the northwestern edge of the Wellsite	Evaluate soil quality nearest location of purported release
4-P2	North-northwest of well ELY 4 near the northwestern edge of the Wellsite	Evaluate soil quality nearest location of purported release
4-P3	Immediately west of the Wellsite in a drainage swale that originates near the western edge of the Wellsite	Evaluate soil quality where fluid could migrate
4-P4	North of the Wellsite immediately downhill from well ELY 6	Evaluate soil quality immediately downslope from location of purported release
4-P5	Immediately west of the Wellsite in a drainage swale that originates near the western edge of the Wellsite, 50 feet northeast of ELY-4-P3	Evaluate soil quality where fluid could migrate
4-P6	North of the Wellsite immediately downhill from well ELY 6	Evaluate soil quality immediately downslope from location of purported release
4-P7	Low point in drainage swale near Ely driveway	Evaluate soil quality where fluid could accumulate

A – Table 2).
Each soil sample was submitted for analysis of the Extended List of constituents (Appendix
collected from each test pit; one from 1.5 to 2 ft. bgs and a second from 3.5 to 4 ft. bgs.
4-P6) was a mixture of cobble and boulder fill with reworked native soil. Two samples were
(pits 4-P1 and 4-P2) and in the fill slope to the northeast (pits 4-P4 and 5.5. Personal Privos)
silty clay with gravel and cobbles. The materials encountered beneath the Wellsite proper
the limit of the Wellsite (at pits4-P3,4-P5 and4-P7) consisted of native red
Each test pit was excavated to approximately 4 ft. bgs. The materials encountered beyond

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#### 4.8 Ex. 6 - Personal Privacy 2/7H NW WELLSITE

URS sampled soil from each of 16 exploratory test pits at the [E. E. Personal Privacy] 2/7H NW Wellsite (Figure 4.8-1). Sampling was performed to evaluate for possible impacts from purported releases of hydro-fracturing fluid and diesel fuel to the surface on the Wellsite.

#### 4.8.1 Ex.6-Personal Privacy 2/7H NW Wellsite Test Pit Excavation and Rationale

Two of the test pits excavated at the [t.s. Personal Power] 2/7H NW Wellsite were targeted to the low area near the southeastern corner of the pad and the remaining 14 pits were located using the Systematic Random Sampling Workbook developed by PADEP to minimize sampling bias, increase the likelihood that any remaining impacts are identified, and to provide a basis for attainment of an Act 2 standard (Figure 4.8-2). A copy of the Random Sampling Workbook used to select test pit locations is included in **Appendix B**.

Test Pit ID	Location Rationale	Purpose
G-7-P1	Targeted to southeastern corner of Wellsite beyond edge of southern reserve pit	Evaluate soil near topographic low on Wellsite
G-7-P2	Targeted to east-southeastern edge of Wellsite beyond edge of eastern reserve pit	Evaluate soil near topographic low on Wellsite
G-7-P3	Random location at grid coordinate (217.8, 20.6)	Evaluate soil quality across Wellsite without sampling bias
G-7-P4	Random location at grid coordinate (222.7, 59.3)	Evaluate soil quality across Wellsite without sampling bias
G-7-P5	Random location at grid coordinate (225.5, 89.3)	Evaluate soil quality across Wellsite without sampling bias

Test Pit ID	Location Rationale	Purpose
G-7-P6	Random location at grid coordinate (221.1, 101.0)	Evaluate soil quality across Wellsite without sampling bias
G-7-P7	Random location at grid coordinate (189.6, 90.0)	Evaluate soil quality across Wellsite without sampling bias
G-7-P8	Random location at grid coordinate (164.0, 63.4)	Evaluate soil quality across Wellsite without sampling bias
G-7-P9	Random location at grid coordinate (132.5, 7.2)	Evaluate soil quality across Wellsite without sampling bias
G-7-P10	Random location at grid coordinate (79.2, 21.6)	Evaluate soil quality across Wellsite without sampling bias
G-7-P11	Random location at grid coordinate (39.0, 53.7)	Evaluate soil quality across Wellsite without sampling bias
G-7-P12	Random location at grid coordinate (71.8, 85.3)	Evaluate soil quality across Wellsite without sampling bias
G-7-P13	Random location at grid coordinate (18.9, 88.9)	Evaluate soil quality across Wellsite without sampling bias
G-7-P14	Random location at grid coordinate (15.1, 31.7)	Evaluate soil quality across Wellsite without sampling bias
G-7-P15	Random location at grid coordinate (11.9, 7.4)	Evaluate soil quality across Wellsite without sampling bias
G-7-P16	Random location at grid coordinate (12.4, 79.7)	Evaluate soil quality across Wellsite without sampling bias

Each test pit was excavated to approximately 4 ft. bgs. The materials encountered consisted of fill material comprised of a mixture of native red silty clay with gravel, cobble and boulders and native glacial till beneath a veneer of gravel. The test pits along the extreme eastern edge of the Wellsite encountered fill to 4 ft. bgs, consisting of cobble and boulders with minor silt and clay. Two samples were collected from each test pit; one from 1.5 to 2 ft. bgs and a second from 3.5 to 4 ft. bgs. Each soil sample was submitted for analysis of the Pit/Frac Suite of parameters (Appendix A – Table 2).

One sample (G-7-P11B) was collected with a field duplicate (G-7-P11c) for quality assurance purposes.

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# 4.8.2 Ex.6-Personal Privacy 2/7H NW Wellsite Soil Quality Results and Comparison to Standards

The results of soil quality analyses for Gesford 2/7H NW Wellsite soil samples are provided on **Table 4.8-1**. The VOCs acetone (which is commonly associated with field sample preservation and laboratory handling), 1,2,4-trimethylbenzene, carbon disulfide, and tetrachloroethene were present at concentrations below their respective SHS R-U MSCs. With the exception of acetone, the VOCs detected were limited to five samples from three of the 16 test pits excavated and sampled. None of the SVOCs analyzed were detected at concentrations above their respective SHS R-U MSCs. Arsenic was detected at concentrations above its SHS R-U MSC in 28 of the 33 samples analyzed, with a maximum observed concentration of 42.6 mg/kg, which is within the range of naturally-occurring arsenic for soil in the area. The other metals detected were not present at concentrations above their respective SHS R-U MSCs in any sample. Indicator parameters MBAS and ASTM chloride in soil were detected at low concentrations in one and seven, respectively, of the 33 samples analyzed and present no threat at these levels.

#### 4.9 Ex. 6 - Personal Privacy 3/9 WELLSITE

URS drilled five soil borings, sampled soil from these five boreholes, and excavated and sampled soil from each of six test pits at this Wellsite (**Figure 4.9-1**). Two surface water samples were collected from the unnamed tributary to Meshoppen Creek immediately to the east and southeast, one upstream and the second downstream of the Wellsite (**Figure 4.9-3**).

#### 4.9.1 Ex.6-Personal Privacy 3/9 Wellsite Soil Boring Installation and Sampling

The five soil borings were oriented so as to evaluate for potential presence of released fluids in the fill material on which the pad is built. Four borings were located to target the presumed hydraulically downgradient side of the Wellsite to evaluate for fluid movement toward the stream to the southeast. The fifth boring was located near the to evaluate subsurface soil quality near the purported release associated with the drilling of this well.

#### 4.9.2 (Ex. 6- Personal Privacy 3/9 Wellsite Test Pit Excavation and Rationale

URS sampled soil from each of six exploratory test pits at the [c. 5. Personal Privacy] 3/9 Wellsite. The locations of the [c. 5. Personal Privacy] 3/9 test pits are shown on **Figure 4.9-2**. Sampling was performed to evaluate for possible impacts from a release of diesel fuel to the surface on the Wellsite. The test pits were located to target the area immediately east of the [c. 5. Personal Privacy] 9V well where the drilling rig sat and where the diesel tank release purportedly occurred. Each of the six test pit locations were selected to evenly distribute samples across the areas where residual diesel impacts would most likely still have been present if the purported release had, in fact, occurred where alleged.

Two test pits encountered the tops of the former reserve pits at the intended locations (G-3-P5 and G-3-P6). The former reserve pits were identified by the presence of a black heavy gauge plastic liner at approximately 2 ft. bgs. These two test pits were immediately abandoned and subsequently relocated as described below.

An odor was noted on the soil in test pit G-3-P1, so the two relocated test pits were installed to the south and west of pit G-3-P1 to delineate, in conjunction with the other test pits, all four sides of that location. Two samples were collected from fill material in each test pit; one from 1.5 to 2 ft. bgs and a second from 3.5 to 4 ft. bgs. Each soil sample was submitted for analysis of the Pennsylvania Short List for Diesel (**Appendix A – Table 2**).

#### 4.9.3 Ex. 6 - Personal Privacy 3/9 Wellsite Soil Quality Results and Comparison to Standards

The results of soil quality analyses for Gesford 3/9 Wellsite soil boring samples are provided on **Table 4.9-1**. The VOCs acetone (which is commonly associated with field sample preservation and laboratory handling), 2-butanone, and carbon disulfide were present but at concentrations below their respective SHS R-U MSCs. None of the SVOCs analyzed were detected at concentrations above their respective SHS R-U MSCs. Manganese was detected in one sample at a concentration above the SHS R-U MSC. Arsenic was detected at concentrations above its SHS R-U MSCs in each of the five samples analyzed, with concentrations ranging from 15.2 mg/kg to 35.6 mg/kg, which is within the range of naturally-occurring arsenic for soil in the area. The other metals detected were not present at concentrations above their respective SHS R-U MSCs in any sample. Indicator parameters MBAS, ethylene glycol, and ASTM chloride in soil were not detected in any of the samples analyzed at concentrations above their respective laboratory reporting limit.

The results of soil quality analyses for [Ex. 6. Personal Pivozy] 3/9 test pit samples are provided on **Table 4.9-2**. Test pit soil samples identified the diesel fuel constituents ethylbenzene, cumene, naphthalene, toluene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene at concentrations above the laboratory reporting limit in both samples from test pit G-3-P1. Each of these compounds was detected at concentrations below their SHS R-U MSCs. Regulated diesel fuel constituents were not detected at concentrations above their SHS R-U MSCs in any of the other ten soil samples analyzed.

# 4.9.4 Ex-6-Personal Privacy 3/9 Wellsite Surface Water Quality Results and Comparison to Standards

Table 4.9-3. Total metals analyses identified detectible concentrations of eight metals (aluminum, barium, calcium, iron, magnesium, manganese, potassium, and sodium). Barium, calcium, iron, magnesium, manganese, potassium, and sodium were detected in the dissolved (filtered) portion of the sample. Chloride and TDS were present in both samples at concentrations below their surface water quality criteria. None of the surface water constituents analyzed were detected at a concentration in excess of its respective–surface water ambient water quality criteria.

# 4.9.5 Summary of Reports Detailing Remediation of Releases at the 3/9 Wellsite

Three releases of diesel fuel at the [s. 6. Personal Privacy] 3V/V9 Wellsite were investigated by Cabot as detailed below. These findings are not part of the assessments made in response to Mr. Ely's allegations but were undertaken during this phase of assessment for completeness due to the other work performed at this Wellsite as described in the previous section.

#### January 30, 2009 Release

On Friday January 30, 2009 at about 5:00 AM, a fitting falled on the fuel supply line that extended from the end of the worker trailer diesel fuel tank to a portable generator, releasing diesel to the surface of the drill pad. The release lasted for a period of about 10 minutes and site personnel estimated that about 75 gallons of diesel fuel was released to the surface of the drill pad that was covered in snow and ice at the time. The diesel fuel impacted an area

about 10' x 10' behind the trailer and about 5' x 20' at the side of the trailer. The extent of impact was limited due primarily to the short duration of the release (time between the failure of the fitting and subsequent control of the release) and the fact that the ground was frozen and covered with snow and ice. Therefore, the diesel had no opportunity to impact the subsurface.

Oil soaks were put down immediately after the spill was detected to soak up as much diesel fuel as possible. GDS then removed all visually impacted snow and ice plus an additional 1/2 inch of surface material from the top of the drill pad via backhoe. The impacted material was placed in a dumpster and subsequently disposed by Diaz Disposal, LLC at the Keystone Sanitary Landfill. Eight test pits were excavated to a depth of about 3 feet bgs to evaluate subsurface conditions and to allow sampling at the 0.5 – 1 foot ft. bgs interval in the area of the spill. Each pit was sampled at 0.5 – 1 ft. bgs and the samples were analyzed for the PA Short List for Diesel Products. Analytical results for the eight samples collected indicate the remediation effort successfully attained the SHS R-U MSCs for all constituents on the PA Short List for Diesel Products.

This information was summarized in a report prepared by URS dated August 28, 2009 that was transmitted to the PADEP on September 16, 2009.

# August 19, 2009 Release and August 21, 2009 Report of Diesel Odors From Soil at the Southeast Corner of the Wellsite

On August 19, 2009, a tank was overfilled with diesel fuel. On-site personnel estimated the release to be about 60 gallons; however, the NOV issued by PADEP dated August 21, 2009 identified the release to be about 100 gallons. The diesel was released directly to the well pad and traveled north-northwest on the well pad. Migration of the released diesel was controlled using absorbent mats and booms. Impacted soil was excavated from the impacted area and staged on the well pad.

On August 21, 2009, PADEP received a complaint concerning a petroleum odor originating from soil off the southeast corner of the well pad. PADEP inspected the area on August 21, 2009 and determined that petroleum products were present in the soil. Shortly afterward,

Cabot excavated shallow soils from this area and staged them on the well pad for characterization and disposal.

The results of confirmational sampling at both locations, conducted by Resource Environmental Management, Inc., demonstrated attainment of the SHS R-U MSCs for all constituents on the PA Short List for Diesel Products. This information was summarized in a report prepared by Environmental Resource Management, Inc. dated October 27, 2009 that was submitted to PADEP. Cabot received Relief From Further Remediation Liability Protection under Act 2 for both of the August 2009 releases.

# 4.10 Example 2 WELLSITE URS installed two soil borings and four exploratory test pits and sampled soil from each at the 2 Wellsite (Figure 4.10-1). URS collected surface water samples at three locations from the creek immediately to the east of 2 Wellsite, on each upgradient and downgradient of the Wellsite and one from the pond immediately to the east.

# 4.10.1 2 Wellsite Soil Boring Installation and Rationale

The two soil borings were located adjacent to the reserve pit and targeted to the presumed hydraulically downgradient side as near as practicable to the edge of the pit based on the limits as defined by the Cabot superintendent. **Figure 4.10-2** shows the locations of the soil borings relative to each reserve pit.

#### 4.10.2 2 Wellsite Test Pit Excavation and Rationale

Since there was no visual evidence of stressed vegetation or hydrocarbon odors noted when traversing the Wellsite and slope, test pit locations were targeted at regular intervals along the reclaimed sides of the Wellsite. The test pits were situated with three test pits excavated into the western face of the reclaimed high wall (the long axis of the Wellsite) and one test pit excavated into the southern face. The locations of the 2 test pits are shown on **Figure 4.10-2**.

Each test pit was excavated both downward and inward into the reclaimed slope to depths of 4 to 5 ft. bgs. The material excavated was a mixture of reworked fill consisting of cobbles

and boulders mixed with native red silty clay and gravel. Two samples were collected from each test pit: one from 1.5 to 2 ft. bgs and a second from 3.5 to 4 ft. bgs. Each sample was submitted for analysis of the PA Short List for Diesel (Appendix A - Table 2).

One sample 2-P1A) was collected with a field duplicate 2-P1C) for quality assurance purposes.

# 4.10.3 2 Wellsite Surface Water Sampling and Rationale

URS collected three surface water samples for the Lewis 2 Wellsite: an upgradient sample that also serves as the downgradient Ex. 5. Personal Privacy 11H Wellsite surface water sample, one from the pond near the base of the slope below the northeastern side of Lewis 2 Wellsite, and a downgradient sample from the confluence of Burdick Creek with Meshoppen Creek (Figure 4.10-3). Samples were analyzed for the Extended List of constituents (Appendix A - Table 1).

4.10.4 Wellsite Soil Quality Results and Comparison to Standards

The results of soil quality analyses for the Wellsite soil boring samples are provided on Table 4.10-1. None of the organic constituents analyzed were present at concentrations above laboratory reporting limits except for acetone (which is a common laboratory contaminant). A number of metals were detected; however, none of those detected were at concentrations above their respective SHS R-U MSCs. Indicator parameters ASTM chloride in soil, MBAS, and ethylene glycol were likewise not detected above the laboratory reporting limits.

The results of test pit soil quality analyses are summarized on Table 4.10-2. None of the constituents on the PA Short List for Diesel analyzed were detected at concentrations above their respective SHS R-U MSCs.

# 4.10.5 Ex.S.-Personal Privacy 2 Wellsite Surface Water Quality Results and Comparison to **Standards**

The results of surface water quality analyses for 2 Wellsite surface water samples are provided on Table 4.10-3. Total metals analyses identified detectible concentrations of 17 metals in the pond sample, while the stream samples identified only aluminum, barium,

calcium, iron, magnesium, manganese, potassium, and sodium above the laboratory reporting limits. The dissolved (filtered) portions of the three samples identified detectible concentrations of barium, calcium, iron, magnesium, manganese, potassium, and sodium only. None of the metals detected in either the filtered and unfiltered samples were present at concentrations above the surface water quality criteria for the constituent. Chloride and TDS were detected in each of the three samples but at concentrations below the surface water quality criteria. VOCs, SVOCs, and DRO were not detected above the laboratory reporting limits in any sample by any of the test methods used.

None of the surface water constituents analyzed in any sample collected from any location in the vicinity of the Wellsite were detected at a concentration above the human health based surface water quality criteria for human health. No surface water constituents analyzed were detected in either the upgradient or downgradient stream samples at a concentration above the surface water quality criteria for aquatic life. In the sample from the pond, total aluminum and total iron was detected above the surface water quality criteria for aquatic life. Aluminum and iron were not detected in the dissolved phase in any sample, and no other constituent was detected above its surface water quality criteria for any sample. These results indicate that total aluminum and total iron are associated with sediment collected from the pond. Concentrations of total aluminum and total iron observed in the vicinity of the Wellsite are within the anticipated range of concentrations for the pond and wetland environments. In ponds and wetlands, aluminum and iron concentrations often vary widely and range higher than in streams due to a variety of naturally-occurring detritus and humic material that collects in areas of standing water and variables such as depth, rainfall, use, turbidity, and water chemistry. The concentrations of aluminum and iron observed in the pond do not indicate releases or water quality impacts related to Cabot's operations at the Lewis 2 Wellsite.

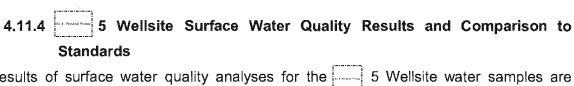
#### 4.11 EL G. P. Personal Prinsey 5 WELLSITE

URS drilled two soil borings and collected soil samples from these two soil boreholes at the Teel 5 Wellsite (**Figure 4.11-1**). In addition, URS collected surface water samples from three locations.

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# 4.11.1 5 Wellsite Soil Boring Locations and Rationale The two soil borings were located adjacent to the reserve pit and targeted to the topographic and presumed hydraulically downgradient side, as near as practicable to the edge of the pit based on the limits as defined by the Cabot superintendent. Figure 4.11-2 shows the locations of the soil borings relative to the reserve pit. 4.11.2 5 Wellsite Surface Water Sampling Locations and Rationale URS collected surface water samples at three locations to evaluate water quality in areas where purported releases would be expected to result in impacts and in areas removed from potential impacts from the Wellsite to provide comparison to background conditions (Figure 4.11-3). Surface water samples were collected: (1) in Meshoppen Creek upgradient (Teel 5-A) and downgradient 5-C) of the Wellsite, and (2) in Meshoppen Creek immediately downslope from the 5 Wellsite (Teel 5-B).

# A) and downgradient 5-C) of the Wellsite, and (2) in Meshoppen Creek immediately downslope from the 5 Wellsite (Teel 5-B). 4.11.3 5 Wellsite Soil Quality Results and Comparison to Standards The results of soil quality analyses for the 5 soil samples are provided on Table 4.11-1. None of the organic constituents analyzed were present at concentrations above laboratory reporting limits except for acetone (probable laboratory contaminant). A number of metals were present but at concentrations below their respective SHS R-U MSCs. Indicator parameters ASTM chloride in soil, MBAS, and ethylene glycol were not detected in either soil sample above the laboratory reporting limits.



The results of surface water quality analyses for the 5 Wellsite water samples are provided on **Table 4.11-2**. Total metals analyses identified detectible concentrations of eight metals (aluminum, barium, calcium, iron, magnesium, manganese, potassium, and sodium) in the three samples. The dissolved (filtered) portions of the three samples identified detectible concentrations of barium, calcium, iron, magnesium, manganese, potassium, and sodium only. None of the metals detected in either the filtered and unfiltered samples were present at concentrations above the surface water quality criterias for the constituent. Chloride and TDS were detected in each of the three samples but at concentrations below their respective surface water quality criteria. VOCs and SVOCs were not detected above

the laboratory reporting limits in any of the surface water samples. The indicator parameter DRO was detected above the laboratory reporting limits in the upgradient sample but not in either of the other two (downgradient) Teel 5 Wellsite surface water samples.

#### 4.11.5 Summary of Reports Detailing Remediation at the Teel 5 Wellsite

Two releases of diesel fuel at the Teel 5 Wellsite were investigated by Cabot as detailed below. These findings are not part of the assessments made in response to Mr. allegations but were undertaken during this phase of assessment for completeness due to the other work performed at this Wellsite as described in the previous section.

#### June 3, 2008 Release

On June 3, 2008 at about 6:00 AM, the GasSearch Drilling Services Company (GDS) drilling crew found a fuel line leaking on the drill pad of Teel 5 Wellsite. Diesel had covered part of the well pad, and was releasing from the pad, down the hillside (and into the ground surface), seeping from the hillside into a drainage ditch along Herb Button Road, flowing into a culvert under the road, and onto a hillside that drained to a flooded area created by a beaver activity (dams). Interim remedial measures were implemented to contain the release and recover free product. Absorbent materials were placed on the impacted area by the crew. About 700 gallons of diesel was recovered within 2 days of the release.

Two applications of Petrox® & water mixture consisting of activated microbes as bioaugmentation of naturally occurring microbes and nutrients to promote microbial activity and lime were applied on the impacted areas. The seep area of the drill pad was excavated and potentially impacted soil was visually evaluated and sampled to evaluate for diesel constituents during Wellsite recovery and restoration. Soil samples were collected, analyzed, and evaluated for attainment with Act 2 cleanup standards. The results indicated the cleanup attained compliance with the SHS R-U MSCs for all constituents on the PA Short List for Diesel Products.

This information was summarized in a report prepared by URS dated November 3, 2009 that was submitted to PADEP. Cabot received Relief From Further Remediation Liability Protection under Act 2 for this release.

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#### 4.12 TEEL 6 WELLSITE

URS collected 13 soil samples from one over-excavated test pit at the Teel 6 Wellsite (**Figure 4.12-1**). In addition, URS collected surface water samples at two locations on Meshoppen Creek.

#### 4.12.1 Teel 6 Wellsite Test Pit Excavation and Rationale

URS collected soil samples from within a large exploratory test pit at the Teel 6 Wellsite (**Figure 4.12-2**). Sampling was performed to evaluate for potential impacts from a 55-gallon drum that had been buried on this Wellsite and subsequently excavated and removed from this Wellsite.

The approximate locations for test pit excavation and soil sampling were provided by a former GDS employee. Excavations in these areas encountered bedrock within 1 ft. bgs. After discussions with another GDS employee who was present when the drum was excavated, it was decided to attempt digging approximately 20 feet south of the original (reported) locations. The GDS employee further indicated that the drum was encountered between 4.5 and 5.5 ft. bgs within a lined drainage swale. This excavation encountered fill in an abandoned drainage channel. This exploratory test pit was enlarged to evaluate the character of the fill and identify the edges of the abandoned drainage channel. Black plastic used to line the abandoned drainage channel was encountered between 6 and 7 ft. bgs. Based on the accuracy of the information provided by the GDS employee and the presence of the plastic liner, it was decided that this second test pit had been installed in the correct location to evaluate for potential releases from the buried drum.

The exploratory test pit was over-excavated to a final dimension of approximately 8 feet wide by 12 feet long, oriented in a general north-south direction (parallel to the top of the slope). Due to the enlarged size of this test pit, samples were obtained from each of the four sidewalls rather than extending the pit further or excavating at a greater distance, which may have removed potentially impacted materials. Three samples were obtained from each sidewall as follows:

Test Pit ID	Location Rationale	Purpose
TEEL-6-P1	Southern sidewall at 2, 5, and 6 ft. bgs	Evaluate soil quality near the surface, at, and below the purported depth of the buried drum, respectively
TEEL-6-P2	Eastern sidewall at 2, 4, and 6 ft. bgs	Evaluate soil quality near the surface, at, and below the purported depth of the buried drum, respectively
Teel-6-P3	Western sidewall at 1.5, 4.5, and 5.5 ft. bgs	Evaluate soil quality near the surface, at, and below the purported depth of the buried drum, respectively
TEEL-6-P4	Northern sidewall at 2, 4.5, and 5.5 ft. bgs	Evaluate soil quality near the surface, at, and below the purported depth of the buried drum, respectively

One sample (TEEL-6-P1B) was collected with a field duplicate (TEEL-6-P1D) for quality assurance purposes.

Each sample collected was submitted for analysis of the PA Short List for Petroleum Products (**Appendix A – Table 2**) and ethylene glycol.

#### 4.12.2 Teel 6 Wellsite Surface Water Sampling and Rationale

Two surface water samples were collected at the Teel 6 Wellsite from Meshoppen Creek, one upgradient and one downgradient of the Wellsite (**Figure 4.12-3**). The upgradient location was selected from the swampy area at the base of the slope below and hydraulically upstream from the Wellsite, while the downgradient location was placed at the outlet from this swampy area.

#### 4.12.3 Teel 6 Wellsite Soil Quality Results and Comparison to Standards

The results of soil quality analyses for the Teel 6 Wellsite soil samples are provided on **Table 4.12-1**. None of the VOCs or SVOCs analyzed were present at concentrations above their respective laboratory reporting limits. Lead was detected in each of the 13 soil samples but at concentrations below its SHS R-U MSC. Ethylene glycol was not detected in any soil sample from the Teel 6 Wellsite above the laboratory reporting limit.

# 4.12.4 Teel 6 Wellsite Surface Water Quality Results and Comparison to Standards

The results of water quality analyses for the Teel 6 Wellsite samples are provided in **Table 4.12-2**. Constituents of the PA Short List for Diesel were not detected at concentrations above the laboratory reporting limit.

#### 4.13 TEEL 7 WELLSITE

URS conducted sampling and analysis of soil samples from two soil borings (2 samples) and surface water samples at four locations (4 samples) at the Teel 7 Wellsite (**Figure 4.13-1**).

#### 4.13.1 Teel 7 Wellsite Soil Boring Locations and Rationale

Two soil borings were located adjacent to the reserve pit and targeted to the topographic and presumed hydraulically downgradient side, as near as practicable to the edge of the pit based on the limits as defined by the Cabot superintendent. **Figure 4.13-2** shows the locations of the soil borings relative to the reserve pit.

#### 4.13.2 Teel 7 Wellsite Surface Water Sampling and Rationale

URS collected four surface water samples associated with the Teel 7 Wellsite: a wetland associated with Meshoppen Creek, immediately upgradient and downgradient of the Wellsite; and downstream of the wetland immediately downgradient of the Wellsite (Figure 4.13-3).

#### 4.13.3 Teel 7 Wellsite Soil Quality Results and Comparison to Standards

The results of soil quality analyses for the Teel 7 Wellsite soil samples are provided on **Table 4.13-1**. With the exception of acetone (which is commonly associated with field sample preservation and laboratory handling), none of the VOCs and SVOCs analyzed were detected at concentrations above their respective laboratory reporting limits. A number of metals were present but at concentrations below their respective SHS R-U MSCs. Indicator parameters ASTM chloride in soil, MBAS, and ethylene glycol were not detected in either soil sample at concentrations above their respective laboratory reporting limits.

# 4.13.4 Teel 7 Wellsite Surface Water Quality Results and Comparison to Standards

The results of surface water quality analyses for Teel 7 Wellsite water samples are provided on **Table 4.13-2**. Due to its proximity, the data from the Teel 5 Wellsite downgradient surface water sample was used as an additional upgradient water quality point for comparison.

VOCs, SVOCs, and DRO were not detected in surface water samples above the laboratory reporting limit, with the exception of bis(2-ethylhexyl) phthalate in one of the samples from the wetland that was detected slightly above the laboratory reporting limit, but did not exceed the surface water quality criteria.

Chloride and TDS were not detected at concentrations above their respective surface water quality criteria-in each of the three samples. Alkalinity ranged from 24 mg/l to 30 mg/l, while the pH of the sample from a wetland immediately downgradient of the Teel 7 Wellsite was lower than the surface water quality criteria for aquatic life. The sample further downgradient had a neutral pH.

Total metals analyses identified detectible concentrations of 17 metals in samples from the wetlands upgradient (Teel 7-A) and downgradient (Teel 7-B) of the Wellsite. The total metals samples from further upgradient (Teel 5-C) and downgradient (Teel 7-C) locations relative to Teel 7 Wellsite identified only aluminum, barium, calcium, iron, magnesium, manganese, potassium, and sodium above the laboratory reporting limits. The dissolved (filtered) portions of the three samples identified detectible concentrations of barium, calcium, iron, magnesium, manganese, potassium, and sodium only.

No metals were detected above the surface water quality criteria with the exception of aluminum and iron in the two samples from the wetlands (Teel 7-A and 7-B). Total aluminum and total iron from the sample from each wetland were above the surface water quality criteria for aquatic life. Dissolved iron in wetland sample Teel 7-B was also above the surface water quality criteria for human health, likely due to the relatively low pH observed in this wetland that is typical of naturally-occurring conditions in such environments. No other metals or other constituents were detected above their surface water quality criterias, as would have been expected had the results been attributable to drilling activities. The

aluminum and iron observations are consistent with expected variability in sediment and surface water quality in pond and wetland environments. In ponds and wetlands, aluminum and iron concentrations often vary widely and range higher than in streams due to a variety of naturally-occurring detritus and humic material that collects in areas of standing water and variables such as depth, rainfall, use, turbidity, and water chemistry. These results indicate that the aluminum and iron observations are associated with sediment in the wetland environment. They do not indicate releases or water quality impacts related to Cabot's operations at the Teel 7 Wellsite.

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#### 5.0 SUMMARY AND CONCLUSIONS

This investigation involved analyses of constituents for which there is an established medium-specific concentration (MSC) in soils as well as several indicator parameters for which there is no MSC, but that could indicate past releases from processes related to natural gas operations.

The "indicator parameters," including Methylene Blue Active Substances (MBAS – surfactants), ethylene glycol, and DRO, were not commonly present in soil and surface water at the Wellsites evaluated. Of the 13 Wellsites studied, one or more of these indicator parameters were detected at six. MBAS were detected in soil at Black 1H, Brooks 1H, Ely 1H/5H7H, and Gesford 2/7H NW. Either DRO or regulated diesel constituents were detected in soil at Brooks 1H, Ely 4/6H, Gesford 2/7H NW and Gesford 3/9. DRO were detected in surface water at one Wellsite (Teel 5), but in the upstream sample relative to this Wellsite.

This investigation also sampled for constituents for which PADEP has established either an MSC in soils or groundwater, or water quality criteria for surface water. The investigation detected such constituents in a limited number of the Wellsites investigated, but none were detected above its Statewide Health Standard (SHS) residential, used-aquifer (R-U) Medium-Specific Concentration (MSC), except for manganese in a few isolated soil samples, and arsenic in soil. However, the Wellsites meet PADEP's standards under an Act 2 attainment demonstration for manganese and arsenic under the Statewide Health or Background Standards. Arsenic in soil was observed at concentrations within the range of naturally-occurring background concentrations observed in the area, as discussed in more detail below.

Overall, metals were the most commonly detected of the constituents in both soil and surface water samples. The most common naturally-occurring mineral-forming metals such as aluminum, iron, manganese, magnesium, potassium, and sodium were identified in the majority of samples. The presence of these metals, at the concentrations observed, are indicative of the normal mineral content of the soil and water sampled and do not provide evidence of a release.

Arsenic was the only metal observed in soil at concentrations above its Statewide Health Standard (SHS) residential, used-aquifer (R-U) Medium-Specific Concentration (MSC) at several Wellsites. It was detected above its SHS R-U MSC sporadically across the study area, both in soil and fill materials used to construct Wellsites. Arsenic or arsenic-based compounds are not known to be used in drilling or hydraulic fracturing or in substances that are alleged by Mr. Ely to have been released at the various Wellsites evaluated. The range of arsenic concentrations detected is narrow, with no soil sample showing arsenic above 42.6 mg/kg. Prior studies of naturally occurring arsenic in soil performed by Cabot in Dimock and Springville Townships have shown that the natural background concentration of arsenic has been up to 236 mg/kg. Arsenic at the observed concentrations is representative of the range of native content in soil and bedrock in the study area and within the naturally-occurring background concentrations in the area of these Wellsites.

The specific results of sampling and analysis of soil from soil borings and test pits, and surface water samples, by individual Wellsite, are summarized below.

#### 5.1 Black 1H Wellsite

Sampling and analysis of soil from two soil borings (2 samples) and 12 surface soil locations (12 samples), and surface water samples from two locations (2 samples) at the Black 1H Wellsite identified the following:

- Low levels (less than 1 mg/kg) of the indicator parameter MBAS were observed in subsurface soil at this Wellsite in one of two samples. No standard is promulgated for MBAS, which could be indicative of either naturally occurring or man-made surfactants;
- Metals detected in soil were observed at concentrations below their SHS R-U MSCs;
- No volatile Organic Compounds (VOCs) or Semi-Volatile Organic Compounds (SVOCs) were detected in soil above their respective SHS R-U MSCs; and
- Surface water samples collected shortly after the suspected released indicated metal constituents higher than the surface water quality criteria. Surface water analyses for the two surface water samples collected in late 2009 show no constituents above the surface water quality criteria except for total aluminum in one of the two downgradient, unfiltered samples, which was very slightly higher than the surface water quality criteria for aquatic life. These observations are consistent with expected

variability in sediment and surface water quality. They do not indicate current surface water impacts at the Black 1H Wellsite.

URS later installed three groundwater monitoring wells and sampled them in November 2010, March 2011, June 2011, and August 2011. The results of the quarterly sampling for a one-year period demonstrate attainment of the SHS R-U MSC for groundwater at the downgradient point of compliance (MW-1) under Act 2. Results of confirmational soil sampling and groundwater monitoring, as well as surface water sampling done shortly after the suspected release, are reported in a Remedial Investigation and Final Report ("Final Report") submitted to PADEP by Cabot with this report.

The 2010-2011 groundwater findings detailed in the Final Report are summarized below:

- As is typical in groundwater sampling, total and dissolved metals were detected in most groundwater collected. Concentrations of all constituents were below their respective MSCs at the point of compliance ("POC") well, demonstrating attainment of the SHS R-U MSCs; and
- No TCL VOCs or TCL SVOCs were detected in groundwater samples at concentrations above their respective SHS R-U MSCs for all samples.

URS also conducted confirmational sampling to evaluate for soil impacts in the area of the seep. Arsenic and manganese in soil downhill from the well pad both exceeded their respective SHS R-U MSC in two of 12 randomly-located samples. These findings demonstrate attainment of the SHS R-U MSCs under the 75%-10X Rule (PA Title 25, §250.707(b)(1)(i)) for arsenic and manganese. Random sampling locations were determined using PADEP's systematic random sampling protocol.

#### 5.2 Brooks 1H Wellsite

Sampling and analysis of soil from 9 test pits (18 samples) and surface water samples from two locations (2 samples) at the Brooks 1H Wellsite identified the following:

MBAS and DRO were detected in three of the 18 samples analyzed; however, these
constituents are indicator parameters and as such, are not regulated (there is not an

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- established MSC under Act 2). The regulated petroleum constituents in samples exhibiting DRO were present below the respective SHS R-U MSCs;
- SVOCs were not detected above their respective SHS R-U MSCs;
- None of the VOCs, SVOCs, and petroleum hydrocarbons were detected in surface water samples;
- No metals were detected above the surface water quality criteria; and
- Chloride and TDS were not detected in either surface water sample at concentrations above the surface water quality criteria.

#### 5.3 W. Chudleigh 1 Wellsite

Sampling and analysis of soil from two soil borings (2 samples) and surface water samples from two locations (2 samples) at the W. Chudleigh 1 Wellsite identified that none of the constituents analyzed under the Pit/Frac Suite of compounds\* (Appendix A – Table 2) were present in either the soil at concentrations above their respective SHS R-U MSCs or the surface water at concentrations above the surface water quality criteria numeric concentrations except for total aluminum and total iron in the unfiltered, downstream sample. Results for dissolved aluminum (not detected above the laboratory reporting limit) and dissolved iron (below the human health standard) indicate these constituents are associated with sediment collected from the stream. These observations are consistent with expected variability in sediment and surface water quality. They do not indicate releases or surface water impacts related to Cabot's operations at the W. Chudleigh 1 Wellsite.

\* The Pit/Frac Suite of Compounds was developed with input from PADEP to investigate the potential for the content of drill pits or hydraulic fracturing fluids to have been released into the environment.

#### 5.4 Costello 1 Wellsite

Sampling and analysis of soil from two soil borings (2 samples) and surface water samples from three locations (3 samples) at the Costello 1 Wellsite identified the following:

 Indicator parameters DRO, MBAS, and ethylene glycol were not detected in any of the soil or surface water samples analyzed;

- VOCs and SVOCs were not detected in soil above their respective SHS R-U MSCs.
   No VOCs or SVOCs were detected in surface water samples above the laboratory reporting limit;
- Arsenic was present at 12.5 mg/kg in one of the two samples analyzed above its SHS R-U MSC of 12 mg/kg, which is within the range of naturally-occurring arsenic for soils. The remainder of the metals analyzed were not detected in soil above their respective SHS R-U MSCs.
- Chloride and TDS were not detected in either surface water sample at concentrations above the surface water quality criteria; and
- No constituent was present in any surface water sample above the surface water quality criteria except for total aluminum and total iron in the sample from the pond, which were above the surface water quality criteria for aquatic life. Results for dissolved aluminum (not detected above the laboratory reporting limit) and dissolved iron (below the human health standard) indicate these constituents are associated with sediment collected from the pondNo other metals or constituents were observed above the surface water quality criteria, as would have been expected if the aluminum and iron observations been attributable to drilling activities.

#### 5.5 Ely 1H/5H/7H SE Wellsite

Sampling and analysis of soil from four soil test borings (4 samples) and four test pits (8 samples) at the Ely 1H/5H/7H SE Wellsite identified the following:

- For the soil samples for the soil test boreholes:
  - o Indicator parameters MBAS and ASTM chloride in soil were not detected in three of the four soil samples. In the fourth soil sample, results for both parameters were only slightly above the laboratory reporting limits; therefore, neither is considered to be cause for concern:
  - Ethylene glycol was not detected above the laboratory reporting limit;
  - The VOCs acetone, methyl ethyl ketone (2-butanone), and toluene were detected below their respective SHS R-U MSCs. The SVOC m&p-cresols was detected above the laboratory reporting limit, but below its SHS R-U MSC. No other SVOCs were detected in the soil samples from the soil test boreholes.

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- No metals were detected in soil samples at concentrations above their respective SHS R-U MSCs.
- For the soil samples from the four test pits (8 samples), all analytes for parameters on the PA Short List for Diesel (Appendix A – Table 2) were not detected above the laboratory reporting limit.

#### 5.6 Ely 2 Wellsite

Sampling and analysis of soil from two soil test boreholes (2 samples) and surface water samples from two locations at the Ely 2 Wellsite identified the following:

- MBAS and ASTM chloride in soil were not detected in either of the two soil samples analyzed;
- Ethylene glycol was not detected in soil in either of the samples analyzed;
- The VOCs acetone, methyl ethyl ketone (2-butanone), and toluene were detected in soil below their respective SHS R-U MSCs. No SVOCs were detected in either soil sample. No VOCs or SVOCs were detected in surface water;
- Arsenic was present in the two samples analyzed (19.6 and 15.4 mg/kg) above its SHS R-U MSC of 12 mg/kg, which is within the range of naturally-occurring arsenic for soils in the area. Other metals detected in soil were all observed at concentrations less than their respective SHS R-U MSCs; and
- No constituent was detected in surface water above its surface water quality criteria for human health. No constituent was detected above its surface water quality criteria for aquatic life except total aluminum and total iron in the unfiltered downgradient stream sample. No other metals or other constituents exceeded its surface water quality criteria, as would have been expected to be observed if these results were attributable to drilling activities. The aluminum and iron observations are consistent with expected variability in sediment and surface water quality. They do not indicate impacts related to Cabot's operations at the Ely 2 Wellsite.

#### 5.7 Ely 4/6H Wellsite

Sampling and analysis of soil from 7 test pits (14 samples) and surface water samples from two locations at the Ely 4/6H Wellsite identified the following:

- ASTM chloride in soil was detected in four of the 14 soil samples analyzed; however,
  this parameter is not regulated in soils, and there is not an established MSC under
  Act 2. Neither chloride nor TDS were detected in surface water above the State Water
  Quality Criteria. The concentrations of ASTM chloride in soil observed would not be
  expected to impact nearby surface waters or groundwater;
- Indicator parameters ethylene glycol and MBAS were not detected in soil;
- The indicator parameter DRO was detected in five of the 14 samples analyzed.
   Analysis of the samples for the PA Short List for Diesel shows that none of these compounds were present in the soil samples at concentrations above their respective SHS R-U MSCs;
- No SVOCs were detected in soil samples above their respective SHS R-U MSCs;
- VOCs and SVOCs, and the indicator parameters ethylene glycol, MBAS and DRO, were not detected in surface water samples above the laboratory reporting limit.
   Metals and chloride detected in surface water samples were at concentrations below their respective surface water quality criteria; and
- The pH of two of the three surface water samples was outside of (lower than) the range of its surface water quality criteria for aquatic life. There was no observed impact to surrounding soils or water supplies from this localized observation and none would be expected.

#### 5.8 Gesford 2/7H NW Wellsite

Sampling and analysis of soil from 16 test pits (33 samples) at the Gesford 2/7H NW Wellsite identified the following:

- ASTM chloride in soil was detected in seven of the 33 soil samples analyzed; however, this constituent is not regulated in soil and there is not an established MSC under Act 2. Neither chloride nor TDS were detected in surface water above the State Water Quality Criteria. The concentrations of ASTM chloride in soil observed would not be expected to impact nearby surface or groundwater;
- The indicator parameter MBAS was detected in soil in one of the samples analyzed;
- Arsenic was detected above its SHS R-U MSC in 28 of the 33 samples analyzed, with a maximum observed concentration of 42.6 mg/kg, which is within the range of

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- naturally-occurring arsenic for soil. The remaining metals analyzed were all at concentrations less than their respective SHS R-U MSCs in all samples; and
- VOCs and SVOCs analyzed were not detected in soil at concentrations above their respective SHS R-U MSCs.

#### 5.9 Gesford 3/9 Wellsite

Sampling and analysis of soil from five soil borings (6 samples) and six soil test pits (13 samples) and surface water samples from two locations at the Gesford 2H/9H Wellsite identified the following:

- Indicator parameters ASTM chloride in soil, ethylene glycol, and MBAS were not detected in any of the six soil boring samples analyzed;
- Arsenic was detected in soil above its SHS R-U MSC in each of the six soil samples
  from the soil borings, with a maximum observed concentration of 35.6 mg/kg, which is
  within the range of naturally-occurring arsenic for soil in the area. All other metals
  analyzed were all observed at concentrations less than their respective SHS R-U
  MSCs for all samples;
- The VOCs detected were present at concentrations below their respective SHS R-U MSCs. No SVOCs were present at concentrations above their respective SHS R-U MSCs;
- Potential diesel constituents were detected in both soil samples from one test pit (P1)
  at concentrations below their respective SHS R-U MSCs. These constituents were
  not detected in any of the remaining ten soil samples from the surrounding test pits;
- Chloride and TDS were not detected at concentrations above their respective surface water quality criteria in either surface water sample;
- VOCs and SVOCs, and the indicator parameter DRO were not detected in surface water samples above the laboratory reporting limit; and
- Metals detected in surface water samples were not detected at concentrations above their respective surface water quality criteria.

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#### 5.10 Lewis 2 Wellsite

Sampling and analysis of soil from two soil borings (2 samples) and 4 test pits (9 samples), and surface water samples from three locations at the Lewis 2 Wellsite identified the following:

- ASTM chloride in soil, ethylene glycol, MBAS, VOCs, and SVOCs were not detected in either of the two soil samples from the soil test boreholes;
- Diesel constituents on the PA short list for Diesel were not detected above their respective laboratory reporting limits or their respective SHS R-U MSCs in the 9 samples of soil samples from the test pits;
- Chloride and TDS were not detected at concentrations above their respective surface water quality criteria in any of the three surface water samples;
- VOCs and SVOCs, and the indicator parameter DRO were not detected in surface water samples above the laboratory reporting limit; and
- No constituent was detected in surface water above its surface water quality criteria for human health. No constituent was detected above its surface water quality criteria for aquatic life except total aluminum and total iron in the unfiltered sample from the pond. No other metal or other constituent exceeded its surface water quality criteria, as would have been expected to be observed if these results were attributable to drilling activities. The aluminum and iron observations are consistent with expected variability in sediment and surface water quality. The aluminum and iron observations do not indicate impacts related to Cabot's operations at the Lewis 2 Wellsite.

# 5.11 Teel 5 Wellsite

Sampling and analysis of soil from two soil test borings (2 samples) and surface water samples from three locations (3 samples) at the Teel 5 Wellsite identified the following:

- VOCs and SVOCs, and the indicator parameters ASTM chloride in soil, ethylene glycol, MBAS, were not detected in the two soil samples from the soil test boreholes;
- Arsenic was detected in soil above its SHS R-U MSC in one of the two soil samples analyzed, at a concentration of 14.1 mg/kg. This concentration is within the background range of concentrations of arsenic found in naturally-occurring, native

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- materials in the area of the Wellsite. Other metals analyzed were all observed at concentrations less than their respective SHS R-U MSCs.
- VOCs and SVOCs were not detected in surface water samples above the laboratory reporting limit. Metals detected in surface water samples were observed at concentrations below their respective surface water quality criteria.
- Chloride and TDS were not detected at concentrations above their respective surface water quality criteria in any of the three surface water samples; and
- The indicator parameter DRO was detected in one surface water sample (upgradient) above the laboratory reporting limit. This finding was for the upstream sample and does not indicate any concern related to the Wellsite.

#### 5.12 Teel 6 Wellsite

Sampling and analysis of soil from one test pit (13 samples) and surface water samples from two locations at the Teel 6 Wellsite identified the following:

- Ethylene glycol and regulated petroleum hydrocarbon constituents were not detected in any of the 13 soil test pit samples analyzed above the laboratory reporting limit;
- Lead was detected in soil but below its SHS R-U MSC; and
- Constituents on the PA Short List for Diesel were not detected in surface water samples above the laboratory reporting limit.

# 5.13 Teel 7 Wellsite

Sampling and analysis of soil samples from two soil borings (2 samples) and surface water samples at four locations (4 samples) at the Teel 7 Wellsite identified the following:

- ASTM chloride in soil, ethylene glycol, MBAS, VOCs, and SVOCs were not detected
  in either of the soil boring samples analyzed, with the exception of the VOC acetone
  (which is commonly associated with field sample preservation and laboratory
  handling), Acetone was present at concentrations below its SHS R-U MSC;
- Metals detected in soil were at concentrations below their SHS R-U MSC;
- Chloride and TDS were not detected at concentrations above their respective SHS R U MSCs and respective surface water quality criteria in each of the four surface water

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- samples. The pH of the water in one of the wetland samples was outside of (lower than) the range of its-surface water quality criteria for aquatic life;
- The indicator parameter DRO and regulated petroleum constituents were not detected in any of the surface water samples in excess of the laboratory reporting limit.
- VOCs and SVOCs were not detected in surface water samples above the laboratory reporting limit, with the exception of bis(2-ethylhexyl) phthalate in one of the samples from the wetland that was detected slightly above the laboratory reporting limit, but did not exceed the surface water quality criteria; and
- No constituents were detected in surface water above its surface water quality criteria except total aluminum and total iron in the two samples from the wetlands, which exceeded the surface water quality criteria for aquatic life, and one sample from one of the wetlands, which exceeded the surface water quality criteria for human health. No other metals or other constituents were detected above their surface water quality criteria, as would have been expected had the results been attributable to drilling activities. The aluminum and iron observations are consistent with expected variability in sediment and surface water quality in pond and wetland environments. They do not indicate releases or impacts related to Cabot's operations at the Teel 7 Wellsite.

In summary no constituent was detected above its respective Statewide Health Standard (SHS) residential, used-aquifer (R-U) Medium-Specific Concentration (MSC), except for manganese in a few isolated soil samples, and arsenic in soil. All Wellsites meet PADEP's standards under Act 2 for manganese and arsenic under the Statewide Health or the Background Standard. Arsenic in soil was detected above its SHS R-U MSC sporadically across the study area, both in soil and fill materials used to construct Wellsites. Arsenic or arsenic-based compounds are not known to be used in drilling or hydraulic fracturing or in substances that are alleged by to have been released at the various Wellsites evaluated. The range of arsenic concentrations detected is narrow, with no soil sample showing arsenic above 42.6 mg/kg. Prior studies of naturally occurring arsenic in soil performed by Cabot in Dimock and Springville Townships have shown that the natural background concentration of arsenic has been up to 236 mg/kg. Arsenic at the observed concentrations is representative of the range of native content in soil and bedrock in the study area and within the naturally-occurring background concentrations in the area of these

Wellsites. The observed arsenic concentrations are, therefore, due to the presence of naturally-occurring minerals in the soil and sediment of the region.

Concentrations of aluminum and iron in surface water samples collected from streams in the vicinity of the Wellsites is consistent with expected variability in sediment and surface water quality for streams near the study area, as reflected in data collected by the U.S. Geological Survey (USGS). USGS data for total aluminum ranges from not detected at the laboratory reporting limit to 6,600 ug/L. USGS for total iron ranges from not detected at the laboratory reporting limit to 325,000 ug/L. Samples collected as part of this investigation from streams observed concentrations of total aluminum ranging from not detected at the laboratory reporting limit up to 3,110 ug/L and for total iron from not detected at the laboratory reporting limit up to 3,120 ug/L. The observed results do not indicate a release or impacts to streams related to Cabot's drilling activity at any Wellsite.

Concentrations of total aluminum and total iron observed in wetland environments and ponds sampled as part of this investigation observed total aluminum and total iron concentrations that range higher than in the streams sampled, but are still within the anticipated range of concentrations for the pond and wetland environments. In ponds and wetlands, aluminum and iron concentrations often vary widely due to a variety of naturally-occurring detritus and humic material that collects in areas of standing water and variables such as depth, rainfall, use, turbidity, and water chemistry. The observed results do not indicate a release or impacts to ponds or wetlands related to Cabot's drilling activity at any Wellsite.

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Sample Identification Sample Date		BLACK-1-B1 5/25/2010	BLACK-1-B2 5/25/2010	SOIL Residential Used Aquifer MSCs <sup>1</sup>
Parameter	Units			
General Chemistry Analyses	ACCUPATED			STATE OF THE PROPERTY OF THE PARTY OF THE PA
Percent Moisture (ASTM D2974-87)	%	4.8	6.2	NS <sup>3</sup>
Nitrogen, Ammonia (EPA 350.1)	mg/kg	15	ND (5.2)	NS
Chloride (SM 4500-CI-E)	mg/L	ND (3.0)2	5	NS
Surfactants (MBAS SM 5540C)	mg/L	0.13	ND (0.10)	NS
Ethylene Glycol (EPA 8015)	mg/kg	ND (10.01)	ND (10.0)	1,400
Metals Analyses (6010B/7470)				THE PARTY PROPERTY
Aluminum	mg/kg	13,100	12,100	190,000
Antimony	mg/kg	ND (0.35)	ND (0.39)	27
Arsenic	mg/kg	9.5	3.9	12
Barium	mg/kg	185	142	8,200
Beryllium	mg/kg	0.69	0.6	320
Boron	mg/kg	6.5	7.1	1,900
Cadmium	mg/kg	0.29	0.27	38
Calcium	mg/kg	3,320	1,560	NS
Chromium	mg/kg	16.3	16.6	1900001
Cobalt	mg/kg	11.8	11,1	50
Copper	mg/kg	16.4	8.1	8,100
ron	mg/kg	25,900	26,300	150,000
_ead	mg/kg	6.8	2.8	450
Magnesium	mg/kg	5,500	4,970	NS
Vanganese	mg/kg	532	402	2,000
Molybdenum	mg/kg	ND (1.4)	ND (1.8)	650
Vickel	mg/kg	24.7	23.1	650
Potassium	mg/kg	1,600	1,660	NS
Selenium	mg/kg	ND (0.35)	0.48	26
Silver	mg/kg	0.67	0.88	84
Sodium	mg/kg	ND (346)	ND (393)	NS
Thallium	mg/kg	ND (1.4)	NO (4.8)	14
Vanadium	mg/kg	14	15.1	1,500
Zinc	mg/kg	65.6	55	12,000
Mercury	mg/kg	(01.0) CM	MD (0.11)	10
VOC Analyses (8260)	The state of the same	NUMBER OF THE PARTY	CONTRACTOR STATE	CONTRACTOR OF THE PROPERTY OF THE PERSON OF
1.1,1-Trichloroethane	mg/kg	ND (0.0067)	ND (0.0083)	20
1,1,2,2-Tetrachloroethane	mg/kg	ND (0.0067)	MD (0.0083)	0.08
1,1,2-Trichloroethane	mg/kg	ND (0 0067)	NEI (0.0083)	0.5
1.1-Dichloroethane	mg/kg	NC (0.0067)	ND (0.0083)	3.1
1.1-Dichloroethene	mg/kg	ND (0.0067)	ND (0.0083)	0.7
1,2,4-Trimethylbenzene	mg/kg	ND (0.0087)	ND (0.0083)	8.4
1,2-Dichlorobenzene	mg/kg	ND (0.0087)	ND (0.0083)	60
1,2-Dichloroethane	mg/kg	ND (0.0067)	ND (0.0083)	0.5
1,2-Dichloroethene (Total)	mg/kg	ND (0.0134)	ND (0.0166)	75
1,2-Dichloropropane	mg/kg	ND (0.0067)	ND (0.0083)	0.5
1,3,5-Trimethylbenzene	mg/kg	ND (0.0067)	ND (0.0083)	2.3
1,3-Dichlorobenzene	mg/kg	ND (0.0067)	ND (0.0083)	61
1,4-Dichlorobenzene	mg/kg	ND (0.0067)	ND (0.0083)	10
2-Butanone (MEK)	mg/kg	ND (0.0134)	MD (0.0186)	400

Sample Identification		BLACK-1-B1	BLACK-1-B2	SOIL Residential Used Aquifer MSCs <sup>1</sup>
Sample Date	0.00	5/25/2010	5/25/2010	
Parameter	Units	Mark the second of the second		
VOC Analyses (8260)	1	ALL COLORS	N/P (7) D4 2 (1)	1.1
2-Hexanone 4-Methyl-2-pentanone (MIBK)	mg/kg	ND (0.0134)	ND (0.0188) ND (0.0188)	290
Acetone	mg/kg mg/kg	ND (0.0134) 0.107	0.225	3,300
Benzene	mg/kg	ND (0.0067)	ND (0.0083)	0.5
Bromodichloromethane	mg/kg	ND (0.0067)	(Esco.c) (II)	8
Bromoform	mg/kg	ND (0.0067)	ND (0.0083)	8
Bromomethane	mg/kg	ND (0.0087)	ND (0.0083)	1
Carbon disulfide	mg/kg	ND (0.5087)	ND (0.0083)	150
Carbon tetrachloride	mg/kg	ND (0.0067)	ND (0.0083)	0.5
Chlorobenzene	mg/kg	ND (0.0067)	HD (0.0083)	10
Chloroethane	mg/kg	ND (0.0067)	ND (0.0033)	23
Chloroform	mg/kg	ND (0.0067)	ND (0.0083)	8
Chloromethane	mg/kg	ND (0.0067)	MD (0,0083)	3
cis-1,2-Dichloroethene	mg/kg	NO (0.0087)	ND (0.0083)	7
cis-1,2-Dichloropropene	mg/kg	ND (0.0087)	1(0.0083)	0.66
Dibromochloromethane	mg/kg	ND (0.0067)	ND (0.0083)	8
Ethylbenzene	mg/kg	ND (0.0067)	ND (0.0053)	70
Isopropylbenzene (Cumene)	mg/kg	HD (0.0087)	ND (0.0083)	600
		ND (0.034)	ND (0.0166)	1000 <sup>5</sup>
m&p-Xylene Methylene Chloride	mg/kg mg/kg	ND (0.0067)	MD (0.0083)	0.5
	mg/kg mg/kg		ND (0.0083)	2002000
Methyl-tert-butyl ether	mg/kg	ND (0.0087) NO (0.0067)	MD (0,0083)	2 25
Naphthalene n-Butylbenzene		NO (0.0087)	ND (0.0083)	950
	mg/kg			290
n-Propylbenzene	mg/kg	ND (0.0067)	ND (0.0083)	1000 <sup>5</sup>
o-Xylene	mg/kg	MD (0.0067)	ND (0.0083)	
p-Isopropyltoluene	mg/kg	NE (0 0067)	NE (0.0083)	NS
sec-Butylbenzene	mg/kg	ND (0.0067)	ND (6,0083)	350
Styrene	mg/kg	ND (0.0067)	ND (0.0083)	24
Tetrachloroethene	mg/kg	NO (0.0087)	ND (0.0083)	0.5
Toluene	mg/kg	MSI (0.0067)	NE (0.0083)	100
TOTAL BTEX	mg/kg	ND (0.0401)	(kD (0.0497)	NS
trans-1,2-Dichloroethene	mg/kg	ND (0.0067)	ND (0.0033)	10
trans-1,3-Dichloropropene	mg/kg	ND (0.0087)	MD (0.0083)	0.66
Trichloroethene	mg/kg	ND (0.0067)	MD (0.0083)	0.5
Vinyl chloride	mg/kg	ND (0.0067)	ND (0.0083)	0.2
Xylene (Total)	mg/kg	ND (0.0200)	ND (0.0248)	1,000
SVOC Analyses (8270)	malle	AID 10 DAG	ND (0.349)	27
1,2,4-Trichlorobenzene 1,2-Dichlorobenzene	mg/kg	ND (0.346) ND (0.346)	ND (0.349)	60
	mg/kg	ND (0.346)	ND (0.348)	61
1,3-Dichlorobenzene 1,4-Dichlorobenzene	mg/kg	District Control of the Control of t	ND (0.349)	10
	mg/kg	ND (0.346)	ND (0.874)	2,300
2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	mg/kg	ND (0.836)	ND (0.349)	2,300
2,4,6-1 richiorophenol	mg/kg	ND (0.346)	ND (0.349)	
	mg/kg	ND (0,346)	ND (0.349)	73
2,4-Dimethylphenol	mg/kg	ND (0.346)	ND (0.874)	7.3
2,4-Dinitrophenol	mg/kg	ND (0.866)		
2,4-Dinitrotoluene	mg/kg	ND (0.348)	ND (0.348)	0.21
2,6-Dinitrotoluene	mg/kg	ND (0.346)	ND (0.349)	3.7

Sample Identification Sample Date		BLACK-1-B1 5/25/2010	BLACK-1-B2 5/25/2010	SOIL Residential Used Aquifer MSCs <sup>1</sup>
Parameter	Units			
SVOC Analyses (8270)		a sententa placement	A NOTAL INCOME.	
2-Chloronaphthalene	mg/kg	MD (0.348)	MD (0.349)	6,200
2-Chlorophenol	mg/kg	ND (0.348)	ND (0.349)	4.4
2-Methylnaphthalene	mg/kg	NO (0.346) -	- ND (0.349)	600
2-Methylphenol(o-Cresol)	mg/kg	ND (0.348)	ND (0,349)	180
2-Nitroaniline	mg/kg	ND (0.886)	ND (0.874)	11
2-Nitrophenol	mg/kg	MD (0.346)	MD (0.349)	29
3&4-Methylphenol(m&p Cresol)	mg/kg	ND (0.692)	ND (0.699)	18 <sup>7</sup>
3,3'-Dichlorobenzidine	mg/kg	ND (0.346)	ND (0.348)	8,3
3-Nitroaniline	mg/kg	ND (0.868)	NO (0.874)	1.1
4,6-Dinitro-2-methylphenol	mg/kg	NO (0.869)	ND (0.874)	0.37
4-Bromophenylphenyl ether	mg/kg	MD (0.346)	NE: (0.349)	NS
4-Chloro-3-methylphenol	mg/kg	NO (0.348)	MEI (0.349)	37
4-Chloroaniline	mg/kg	MD (0.348)	ND (0.349)	0.42
4-Chlorophenylphenyl ether	mg/kg	ND (0.348)	ND (0.345)	NS
1-Nitroaniline	mg/kg	ND (0.866)	ND (0.374)	3.3
1-Nitrophenol	mg/kg	MD (0.346)	ND (0.349)	6
Acenaphthene	mg/kg	ND (0.346)	MD (0.349)	2,700
Acenaphthylene	mg/kg	ND (0,346)	MD (0,349)	2,500
Anthracene	mg/kg	ND (0.348)	MEJ (0.349)	350
Benzo(a)anthracene	mg/kg	ND (0.346)	ND (0.343)	5.7
Benzo(a)pyrene	mg/kg	MD (0.346)	ND (0.348)	0.57
Benzo(b)fluoranthene	mg/kg	MD (0.346)	NE (0.349)	5.7
Benzo(g,h,i)perylene	mg/kg	ND (0.348)	NO (0.349)	180
Benzo(k)fluoranthene	mg/kg	NO (0.346)	ND (0.348)	57
Benzyl alcohol	mg/kg	ND (0.346)	ND (0.349)	1,800
ois(2-Chloroethoxy)methane	mg/kg	ND (0.346)	MEI (0.349)	11
pis(2-Chloroethyl) ether	mg/kg	ND (0.345)	NC (0.349)	0.015
pis(2-Chloroisopropyl) ether	mg/kg	ND (0.343)	MD (0.349)	30
pis(2-Ethylhexyl)phthalate	mg/kg	ND (0.346)	ND (0.348)	130
Butylbenzylphthalate	mg/kg	ND (0.346)	ND (0.348)	3,000
Chrysene	mg/kg	MD (0.348)	ND (0.349)	230
Dibenz(a,h)anthracene	mg/kg	ND (0.348)	ND (0.348)	0.57
Dibenzofuran	mg/kg	ND (0.346)	ND (0.348)	95
Diethylphthalate	mg/kg	ND (0.348)	ND (0.349)	2900
Dimethylphthalate	mg/kg	ND (0.346)	ND (0.349)	NS
Di-n-butylphthalate	mg/kg	ND (0.348)	ND (0.349)	1500
Di-n-octylphthalate	mg/kg	ND (0.346)	ND (0.348)	8,800
Fluoranthene	mg/kg	ND (0.346)	ND (0.348)	3,200
luorene	mg/kg	ND (0.346)	ND (0.349)	3,000
dexachloro-1,3-butadiene	mg/kg	ND (0.346)	ND (0.349)	10
Hexachlorobenzene	mg/kg	ND (0.346)	ND (0.349)	0.96
Hexachlorocyclopentadiene	mg/kg	ND (0.346)	NO (0.348)	91
lexachloroethane	mg/kg	ND (0.346)	NO (0.349)	0,56
ndeno(1,2,3-cd)pyrene	mg/kg	ND (0.346)	ND (0.349)	5.7

## Dimock Township Susquehana County, PA

Sample Identification Sample Date Parameter		BLACK-1-B1 5/25/2010	BLACK-1-B2 5/25/2010	SOIL Residential Used Aquifer MSCs <sup>1</sup>
SVOC Analyses (8270)	CLASS NO.		TO SEE STREET, INC. IN CO.	
Isophorone	mg/kg	ND (0.348)	ND (0.349)	10
Naphthalene	mg/kg	ND (0.348)	ND (0.349)	25
Nitrobenzene	mg/kg	ND (0.349)	ND (9.348)	7.3
N-Nitroso-di-n-propylamine	mg/kg	ND (0.348)	ND (0.349)	0.0094
N-Nitrosodiphenylamine	mg/kg	ND (0.348)	ND (0.345)	20
Pentachlorophenol	mg/kg	ND (0.868)	ND (0.874)	5
Phenanthrene	mg/kg	ND (0.348)	ND (0.348)	10,000
Phenol	mg/kg	ND (0.348)	ND (0,349)	200
Pyrene	mg/kg	ND (0.346)	ND (0.348)	2,200

#### Notes:

12.5 =Result exceeds SHS Residential, Used Aquifer MSC

<sup>1 =</sup> Medium-Specific Concentrations (MSCs) were established from the Residential, Used Aquifer with TDS < 2500 MSCs Soil to Groundwater Numeric Values listed in Appendix A, Table 3 and Table 4 of 25 PA Code Section 250, Administration of the Land Recycling Act (Act 2) regulations.

<sup>&</sup>lt;sup>2</sup>= ND (3.0) = Parameter not detected at the detection limit specified in parentheses.

<sup>3=</sup>No Standard

<sup>&</sup>lt;sup>4</sup>=as Chromium III.

<sup>5=</sup>as cis-1,2-dichloroethene

<sup>&</sup>lt;sup>6</sup>=as Total xylenes.

<sup>7=</sup>as p-Cresol

# Table 4.1-2 Analytical Results for Soil (Seep Area) Black 1H Wellsite

Dimock, Township Susquehana County, PA

Samp	le Identification Sample Date Units	<b>BLK1H-1</b> 6/29/2010	<b>BLK1H-2</b> 6/29/2010	<b>BLK1H-3</b> 6/29/2010	<b>BLK1H-4</b> 6/29/2010	<b>BLK1H-5</b> 6/29/2010	<b>BLK1H-6</b> 6/29/2010	<b>BLK1H-7</b> 6/29/2010	<b>BLK1H-8</b> 6/29/2010	BLK1H-9 6/29/2010	BLK1H-10 6/29/2010	<b>BLK1H-11</b> 6/29/2010	BLK1H-12 6/29/2010	SOIL Residential Used Aquifer MSCs <sup>1</sup>
General Chemistry An		2974-87)	E CANADA	A STATE OF									产品等的	
Percent Moisture	%	21.5	29.9	30.4	24.8	29.2	43.5	28.2	22.5	27.5	19.6	28	22.3	NS <sup>2</sup>
Metals Analyses (6010	0/7470)	San San					PE-1-19/56	SE WOLL		3. 第二条 · 压	1880 July 201			N. State of the
Aluminum	mg/kg	13,500	948	15,100	10,300	14,700	18,900	15,100	15,000	12,400	13,200	13,200	15,200	190,000
Antimony	mg/kg	ND (0.6)3	0.63	NO (0.41)	ND (0.51)	ND (0.65)	ND (0.69)	ND (0.45)	ND (0.45)	ND (0.39)	ND (0.32)	ND (0.43)	ND (0.37)	27
Arsenic	mg/kg	6.2	8.6	11.4	5.6	10.6	8.8	27.7	6.1	14.9	9.3	7.0	9.1	12
Barium	mg/kg	179	14.4	304	85.6	246	366	351	172	268	236	691	187	8,200
Beryllium	mg/kg	0.5	3.4	0.94	0.38	0.84	2.7	1.2	0.54	0.82	0.76	0.52	0.74	320
Boron	mg/kg	ND (8)	ND (6)	ND (4.1)	ND (5.1)	ND (8.5)	ND (8.3)	ND (4.5)	ND (4.5)	ND (3,9)	ND (3.2)	ND (4.3)	ND (3.7)	1900
Cadmium	mg/kg	0.24	ND (0.24)	0.21	ND (0.2)	ND (0.25)	0.38	0.3	0.2	ND (0.16)	0.25	NO (0.17)	ND (0.15)	38
Calcium	mg/kg	1,030	659	2,050	344	2,500	1,740	2,360	573	835	1,080	2,890	884	NS
Chromium	mg/kg	12.4	15.2	15.8	10.8	14.7	16.5	18.8	13.4	10.3	11	14.1	14.8	190,000 <sup>4</sup>
Cobalt	mg/kg	6.5	9.8	13.0	6.2	12.3	21.5	21.4	6.8	22.6	15	7.8	11.6	50
Copper	mg/kg	8.2	88.0	15.8	4.4	13.7	18.2	25.6	7.8	15.1	13.9	12.3	14.4	8,100
Iron	mg/kg	21,900	5,580	20,500	21,000	19,700	20,200	23,500	22,900	19,600	16,600	18,700	23,400	150,000
Lead	mg/kg	24.0	14.4	28.5	37.6	28.8	40.8	51.6	22.3	66.3	24.0	23.7	20.6	450
Magnesium	mg/kg	2,170	119	3,240	1,730	3,540	2,800	3,180	2,570	2,620	2,250	2,890	3,400	NS
Manganese	mg/kg	418	5	1,070	509	415	2,130	1,870	756	2,060	1,470	331	422	2,000
Molybdenum	mg/kg	ND (2.4)	2.7	MD (1.7)	ND (2)	ND (2.8)	ND (2.8)	ND (1.8)	ND (1.8)	ND (1.8)	ND (1.3)	NO (1.7)	ND (1.8)	650
Nickel	mg/kg	12.4	39.5	17.1	8.6	17.4	24.2	17.4	13.7	15.6	13.4	13.6	15.9	650
Potassium	mg/kg	1,410	438	1,470	1,300	1,520	1,420	1,450	1,390	1,070	1,020	1,880	1,100	NS
Selenium	mg/kg	MD (0.6)	4.5	ND (0.41)	0.59	NO (0.66)	0.81	ND (0.45)	ND (0.45)	ND (0.38)	ND (0.32)	ND (0.43)	ND (0.37)	26
Silver	mg/kg	ND (0.24)	0.25	0.29	0.29	NO (0.26)	ND (0.28)	0.21	0.21	0.15	0.14	0.18	0.27	84
Sodium	mg/kg	ND (599)	ND (598)	ND (413)	MD (612)	ND (652)	ND (688)	ND (450)	ND (453)	ND (389)	ND (319)	ND (427)	ND (374)	NS
Thallium	mg/kg	ND (2.4)	ND (2.4)	ND (1.7)	ND (2)	ND (2.6)	ND (2.8)	ND (1.8)	ND (1.3)	ND (1.8)	ND (1.3)	ND (1,7)	ND (1.5)	14
Vanadium	mg/kg	20.4	46.9	19.6	20.4	17.4	20.7	21.4	20.2	14.7	15.1	18.6	19.5	1,500
Zinc	mg/kg	62.3	29.1	68.9	42.5	66.4	82.5	55.5	64.8	60.1	67.2	63.8	61.2	12,000
Mercury	mg/kg	ND (0.12)	ND (0.14)	ND (0.14)	ND (0.13)	ND (0.13)	ND (0.17)	ND (0.13)	ND (0.12)	NO (0.14)	ND (0.12)	ND (0.14)	ND (0.12)	10

=Result exceeds SHS Residential, Used Aquifer MSC

DIM0209034 DIM0209116

Notes:

1 = Medium-Specific Concentrations (MSCs) were established from the Residential, Used Aquifer with TDS < 2500 MSCs Soil to Groundwater Numeric Values listed in Appendix A, Table 3 and Table 4 of 25 PA Code Section 250, Administration of the Land Recycling Act (Act 2) regulations.

2=No Standard

3 = NO (0.6) = Parameter not detected at the detection limit specified in parentheses.

4=as Chromium III.

	BLACK #1 A	BLACK #1 B	Surface Water Quality Criteria <sup>1</sup>					
	Downgradient 12/9/2009	Sidegradient 12/10/2009	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria			
Units	TANKS THE STATE OF	TANKS BOOK SELECT			EN DONAL STREET			
me/l	100 100	WD 710 M	NG3	NIC NIC	NS			
					NS			
			101777		NS			
					250			
			100,000		NS			
					NS			
					750			
					NS			
					NS			
					NS			
mg/L	SHOW TO SHOW THE REAL PROPERTY.	The Italian	miorization five of	ALL MARKET HAS	SECTION AND ADDRESS OF THE PARTY OF THE PART			
ua/l	759	144	l NS	750	NS			
					5.6			
					10			
					2,400			
					NS			
					3,100			
					NS			
					NS			
					NS			
					NS			
					NS			
					NS <sup>4</sup>			
					NS			
					NS			
			The Part of the Pa		1,000			
					NS			
					NS			
					NS			
					NS			
					NS			
					NS			
					0.24			
					NS			
					NS			
ug/L	NO (0.20)	MLZ (BLZQ):	NS	I NS	NS			
THE TAXABLE	112 150 20	115 150 01	110	110	1/0			
					NS			
					NS			
					NS			
					NS			
					NS			
					NS			
					NS			
					NS			
					NS			
					NS			
					NS			
					300			
					NS			
					NS			
					NS			
					NS			
					610			
					NS			
					NS			
					NS			
ug/L	32,000	21,000	NS	NS	NS			
					RIC			
ug/L	ND HE OI	ND (10 0)	NS	NS	NS			
ug/L ug/L ug/L	NO (12.0) NO (3.0) NO (10.0)	(0.5) CH (0.5) CH (0.01) GM	NS NS 120	NS NS 120	NS NS			
	Units  mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/	A   Downgradient   12/9/2009   Units	A	Downgradient   12/9/2009   12/10/2009   12/10/2009   Flsh and Aquatic Life Criteria - Chronic	Downgradient   12/9/2009   Sidegradient   12/10/2009   Fish and Aquatic Liffe Criteria - Chronic   Fish and Aquatic Liffe Criteria - Chronic   Fish and Aquatic Liffe Criteria - Chronic   Fish and Aquatic Liffe Criteria - Acute   Fish and Apuatic Liffe Criteria - Acute   Fish and			

Sample Identification		BLACK #1 A	BLACK #1 B	Surface Water Quality Criteria					
Sample Location Sample Date	*** **	Downgradient 12/9/2009	Sidegradient 12/10/2009	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria			
Parameter	Units	A SURE OF THE PARTY OF		Omone	A CONTRACTOR OF THE PARTY OF TH	Contract of the Contract of th			
VOC Analyses (8260)	110/	AD (* 0)	ALC: A CO	610	3,000	NS			
1,1,1-Trichloroethane	ug/L	NO 44 ST	MD (1 C) MD (1 C)	210	1,000	0.17			
1,1,2,2-Tetrachloroethane	ug/L			680	3,400	0.59			
1,1,2-Trichloroethane	ug/L	NO (1.8)	HID (1.0)	NS	NS	NS NS			
1,1-Dichloroethane	ug/L ug/L	-15 (1.9)	ND 17.01	1,500	7,500	33			
1,1-Dichloroethene 1,2,4-Trichlorobenzene		ROMA	ACT 1- 134	26	130	35			
1.2.4-Trimethylbenzene	ug/L ug/L	-(D) (1.01	MC to O	NS NS	NS NS	NS			
1.2-Dichlorobenzene	ug/L	KD:11.01	NE 1= 0	160	820	420			
1,2-Dichloroethane	ug/L	NO (1.0)	ND (10)	3,100	15,000	0.38			
1,2-Dichloroethane 1,2-Dichloroethene (Total)	ug/L	MD (2.0)	MD (2.0)	NS NS	NS	NS NS			
1,2-Dichloropropane	ug/L	ND 14.01	NO (* 3)	2,200	11,000	NS			
1,3,5-Trimethylbenzene	ug/L	ND (1 0)	H211.01	NS	NS	NS			
1,3-Dichlorobenzene	ug/L	ND (4.0)	ND (1.0)	69	350	420			
1,4-Dichlorobenzene	ug/L ug/L	10 (1 0)	ND (10)	150	730	420			
2-Butanone (MEK)	ug/L	ND (10.0)	NO (10.0)	32,000	230,000	21,000			
2-Hexanone	ug/L	ND 7:00	NO (10.0)	4,300	21,000	NS			
4-Methyl-2-pentanone (MIBK)	ug/L ug/L	MD (10 D)	MD ("0.5)	5,000	26,000	NS			
Acetone	ug/L	NO (10 S)	ND (16.0)	86,000	450,000	3,500			
Benzene	ug/L ug/L	160 (5.6)	eID (1.01	130	640	1.2			
		NE (1:0)		NS	NS NS	NS			
Bromochloromethane	ug/L		NO (1.0)	NS	NS	0.55			
Bromodichloromethane	ug/L		ND (1,0)			COCCUPACION IN			
Bromoform	ug/L	((D (1,0)	MD (1.0)	370	1,800	4.3			
Bromomethane	ug/L	MD (1.0)	MDITO	110	550	45.47			
Carbon disulfide	ug/L	ND (1.0)	PED (1.0)	NS	NS	NS			
Carbon tetrachloride	ug/L	NO (5.0)	MP (14,0)	560	2,800	0.23			
Chlorobenzene	ug/L	ND 14.01	ND (1.0)	240	1,200	130			
Chloroethane	ug/L	ND (1.0)	NET MICH	NS	NS	NS			
Chloroform	ug/L	NO (1.0)	HID 11.01	390	1,900	5.7			
Chloromethane	ug/L	PED (1.0)	10.11.034	5,500	28,000	NS			
cis-1,2-Dichloroethene	ug/L	NO (1.0)	ND (1.0)	NS	NS	NS			
cis-1,3-Dichloropropene	ug/L	MOTION	MD 12 DI	61	310	0.34			
Dibromochloromethane	ug/L	NE (1 9)	ND triby	NS	NS	0.4			
Ethylbenzene	ug/L	ND (10)	ND 10)	580	2,900	530			
Isopropylbenzene (Cumene)	ug/L	NO 11 ON	NE (1 C)	NS	NS	NS			
m&p-Xylene	ug/L	NO (2.0)	ND (20)	210 <sup>6</sup>	1,1005	70,000 <sup>5</sup>			
Methylene Chloride	ug/L	MD (1-0)	ND (1 0)	2,400	12,000	4.6			
Methyl-tert-butyl ether	ug/L	(1.0) Old	rit (1 D)	NS	NS	NS			
Naphthalene	ug/L	ND (2.0)	ND (2.0)	43	140	NS			
n-Butylbenzene	ug/L	ND (S.D)	和巨性的	NS	NS	NS			
n-Propylbenzene	ug/L	IO (1) OH	NO (TD)	NS	NS	NS			
o-Xylene	ug/L	ND (1.0)	ND (1.0)	210 <sup>5</sup>	1,1005	70,0005			
p-Isopropyltoluene	ug/L	ND (1.3)	MD m.o.	NS	NS	NS			
sec-Butylbenzene	ug/L	NO CLOS	M2 (1.0)	NS	NS	NS			
Styrene	ug/L	ND (1 D)	ME (1.3)	NS	NS	NS			
Tetrachloroethene	ug/L	ND (1 0)	ND (1.0)	140	700	0.69			
Toluene	ug/L	MC (1.0)	MG (1.0)	330	1,700	1,300			
trans-1,2-Dichloroethene	ug/L ug/L	ND /1.01	NO (1.0)	1,400	6,800	140			
	ug/L ug/L	WD (1.0)	ND (10)	61	310	0.34			
trans-1,3-Dichloropropene		NO (1.0)	NO (1.0)	450	2,300	2.5			
Trichloroethene	ug/L	1867 [ 1.14]							
Vinyl chloride	ug/L	RC (1.0)	THD (1.0)	NS	NS	0.025			

Sample Identification		BLACK #1 A	BLACK #1 B	Surface Water Quality Criteria <sup>1</sup>					
Sample Location Sample Date		Downgradient 12/9/2009	Sidegradient 12/10/2009	Fish and Aquatic Life Criteria -	Fish and Aquatic Life Criteria - Acute	Human Health Criteria			
Parameter	Units			Chronic	A				
SVOC Analyses (8270)		#D (5.5)		26	1 130	35			
1,2,4-Trichlorobenzene 1,2-Dichlorobenzene	ug/L		MC 11.1	160	820	420			
1,3-Dichlorobenzene	ug/L ua/L	MD (5.1)	NO FEE	69	350	420			
1,4-Dichlorobenzene	ug/L	AD CLAS	100 100	150	730	420			
1-Methylnaphthalene	ug/L	ND (3.1)	200 (1.1)	NS	NS NS	NS			
2,4,5-Trichlorophenol	ug/L	ND (2.7)	- ND /2.A)	NS	NS	NS			
2,4,6-Trichlorophenol	ug/L	40 (1.1)	NO fet 13	91	460	1.4			
2,4-Dichlorophenol	ug/L	No in the	NE (F, I)	340	1,700	77			
2,4-Dimethylphenol	ug/L	NO (1.1)	- NE # 17	130	660	380			
2,4-Dinitrophenol	ug/L	ND (2.7)	ND (2.9)	130	660	69			
2,4-Dinitrotoluene	ug/L	NO (1.1)	ADITAL	320	1,600	0.05			
2,6-Dinitrotaluene	ug/L	NE (11)	NOME	200	990	0.05			
2-Chloronaphthalene	ug/L	ND (1.1)	MD (5.5)	NS	NS	1,000			
2-Chlorophenol	ug/L	MD (1.1)	NO (5.3)	110	560	81			
2-Methylnaphthalene	ug/L	ND(11)	NO KINI	NS	NS	NS			
2-Methylphenal(o-Cresol)	ug/L	ND (1 1)	NO 13.17	NS	NS	NS			
2-Nitroaniline	ug/L	ND (2.7)	MD (2.9)	NS	NS	NS			
2-Nitrophenol	ug/L	No fi ti	ND (5.3)	1,600	8,000	NS			
3&4-Methylphenol(m&p Cresol)	ug/L	ND (2.1)	ND (2.3)	NS	NS	NS			
3.3'-Dichlorobenzidine	ug/L	ND (7.5)	NO (3.1)	NS	NS	NS			
3-Nitroaniline	ug/L	MD (27)	MD (2.9)	NS	NS	NS			
4,6-Dinitro-2-methylphenol	ug/L	MD (2.7)	MEI (2.6)	16	80	13			
4-Bromophenylphenyl ether	ua/L	MD (1.1)	ND (1.1)	54	270	NS			
4-Chloro-3-methylphenol	ug/L	ND (1.1)	MD (5.5)	NS	NS	NS			
4-Chloroaniline	ug/L	ND (1.1)	ND (1.1)	NS	NS	NS			
4-Chlorophenylphenyl ether	ug/L	MD (1 1)	(NE) (1.1)	NS	NS	NS			
4-Nitroaniline	ug/L	MD (2.7)	MD (2.9)	NS	NS	NS			
4-Nitrophenol	ug/L	ND (11)	NE (1.5)	470	2,300	NS			
Acenaphthene	ug/L	ND (1.7)	MDITT	17	83	670			
Acenaphthylene	ug/L	NO (1.1)	ND (1.5)	NS	NS	NS			
Anthracene	ug/L	ND (1.1)	MESSES	NS	NS	8,300			
Azobenzene	ua/L	ND(1.1)	100 15 15	NS	NS	NS			
Benzo(a)anthracene	ug/L	ויבוז פא	0E (1.5)	0.1	0.5	0.0038			
Benzo(a)pyrene	ug/L	NO (1 1)	NE 14.41	NS	NS	0.0038			
Benzo(b)fluoranthene	ug/L	MD-13-13	WD 15,30	NS	NS	0.0038			
Benzo(g,h,i)perylene	ug/L	MD (111)	14D (4-4)	NS	NS	NS			
Benzo(k)fluoranthene	ug/L	NO (11)	NDCCT	NS	NS	0.0038			
Benzoic acid	ug/L	ND (107)	NO (11.5)	NS	NS	NS			
Benzyl alcohol	ug/L	=iD(1.1)	MD (1.7)	NS	NS	NS			
bis(2-Chloroethoxy)methane	ug/L	NO (1.1)	ND (1 T)	NS	NS	NS			
bis(2-Chloroethyl) ether	ug/L	ND (1.1)	ND (1.1)	6.000	30,000	0.03			
bis(2-Chloroisopropyl) ether	ug/L	NE (1.1)	MD (1.1)	NS	NS	1,400			
bis(2-Ethylhexyl)phthalate	ug/L	ND (1.1)	ND (1.1)	910	4,500	1.2			
Butylbenzylphthalate	ug/L	ND (1.1)	1/0 (1.1)	35	140	150			
Carbazole	ug/L	ND(1.1)	MD (1.1)	NS	NS	NS			
Chrysene	ug/L	H2 (1.1)	ND (1.1)	NS	NS	0.0038			
Dibenz(a,h)anthracene	ug/L	ND (1.1)	ND (1.1)	NS	NS	0.0038			
Dibenzofuran	ug/L	ND (1.1)	ND ( . ti	NS	NS	NS			
Diethylphthalate	ug/L	ND (1.5)	ND (5 th	800	4.000	17,000			
Dimethylphthalate	ug/L	ND (1.1)	MD 71 11	500	2500	27,000			
Di-n-butylphthalate	ug/L	HD (1.1)	ND (1.1)	21	110	2,000			
Di-n-octylphthalate	ug/L	NO (1.7)	ND (1.1)	NS	NS	NS			
Fluoranthene	ug/L	MD (T 1)	MD (1 f)	40	200	130			
Fluorene	ug/L	NDTT	ND (1.1)	NS	NS	1,100			

#### Dimock Township Susquehanna County, PA

Sample Identification		BLACK #1 A	BLACK #1 B	Surface Water Quality Criteria <sup>1</sup>					
Sample Location Sample Date	Units	Downgradient 12/9/2009	Sidegradient 12/10/2009	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria			
SVQC Analyses (8270) Continued		THE WORLD	NEW YEAR	A DIVERSE	AND AND ESTABLISHED	The Paris Date:			
Hexachloro-1,3-butadiene	ug/L	NO (1.1)	ND (1.1)	2	10	0.44			
Hexachlorobenzene	ug/L	NO M.1)	NO MAD	NS	NS	0.00028			
Hexachlorocyclopentadiene	ug/L	NO (1, 1)	ND(11)	1	5	40			
Hexachloroethane	ug/L	NE (1.1)	ND (1.1)	12	60	1.4			
Indeno(1,2,3-cd)pyrena	ug/L	ND (2.1)	ND (14)	NS	NS	0.0038			
Isophorone	ug/L	ND (1.1)	ND (5.5)	2,100	10,000	35			
Naphthalene	ug/L	ND (1.1)	ND 在至	43	140	NS			
Nitrobenzene	ug/L	10.61.014	MD to 13	810	4,000	17			
N-Nitrosod/methylamine	ug/L	NOTTE	(11)	3,400	17,000	0.00069			
N-Nitroso-di-n-propylamine	ug/L	ND (11)	ND (1.1)	NS	NS	0.005			
N-Nitrosodiphenylamine	ug/L	ND (1.1)	ND (5.5)	59	300	3.3			
Pantachlorophenol	ug/L	ND (2.7)	ND (2.9)	4.0	5.3	0.27			
Phenanthrene	ug/L	ND (1.1)	MD (1-1)	1	5	NS			
Phenol	ug/L	ND (1.1)	ND (1 1)	NS	NS	21,000			
Pyrene	ug/L	ND (1 1)	HD 45 45	NS	NS	830			

#### Notes:

<sup>6</sup>= As total xylenes.

= Result exceeds applicable surface water quality criteria.

<sup>1=</sup> Values from 25 Pa Code Chapter 93.8, Table 5; values assume a pH of 6.5 SU and hardness of 100 mg/L, where applicable. Values provided for chromium are for chromium III. Values for chloride, TDS, pH, manganese and Iron from 25 Pa Code Chapter 93.7, Table 3.

<sup>&</sup>lt;sup>2</sup>= ND (1 0) = Parameter not detected at the detection limit specified in parentheses.

<sup>3=</sup> No Standard.

<sup>&</sup>lt;sup>4</sup>= The specific water quality criteria for total recoverable iron is for aquatic life uses and is expressed as a 30-day average concentration. The water quality criteria for human health is expressed as dissolved iron. See 25 PA Code Section 93.7.

#### Test Pit Analytical Results for Soil Brooks 1H Wellsite

Dimock Township Susquehana County, P.

	Location		Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	Brooks 1H	SOIL Residential Used
erameter S	entification sample Date	Units	BRK-1H-P1A 5/25/2010	BRK-1H-P1B 5/25/2010	BRK-1H-P2A 5/25/2010	BRK-1H-P2B 5/25/2010	BRK-1H-P3A 5/25/2010	BRK-1H-P3B 5/25/2010	BRK-1H-P4A 5/25/2010	BRK-1H-P4B 5/25/2010	BRK-1H-P5A 5/25/2010	BRK-1H-P5B 5/25/2010	BRK-1H-P6A 5/25/2010	BRK-1H-P6B 5/25/2010	BRK-1H-P7A 5/25/2010	BRK-1H-P7B 5/25/2010	BRK-1H-P8A 5/25/2010	5/25/2010	BRK-1H-P9A 5/25/2010	BRK-1H-P9B 5/25/2010	Aquifer MSCs*
eneral Chemistry Analyses ercent Moisture (ASTM D2974-8	37)	%	12.4	10.1	13.2	9.1	12.9	12.3	16.4	9.7	15.2	12	8.3	8.9	10.5	9.9	9	8.4	9.1	9.6	NS <sup>3</sup>
trogen, Ammonia (EPA 350.1) 1 (EPA 9045)		mg/kg td. Units	6.1	6.2 5.6	6	6.8	59.7 6.1	18.8	144 6.8	5.7 5.9	64.5 5.6	7.5	31.8 5.3	HD (5.5)	52.6 6.3	16.5 6.6	HO (5 1)	6.8	6.6	MO (5.2)	1,900 NS
loride (SM 4500-CI-E)		mg/L	MD (3.D)	(0.8) GH	ND (3.0)	MD (3.0)	ND (9 C	ND (3.0)	ND (3.0)	ND raist	ND (3.0)	10.016.04	ND (3.0)	ND (3.0)	3	ND /3 01	NO (3 0)	ND (3.0)	40 f3.0	KD (3.0)	NS
idactants (MBAS SM 5540C)		mg/L	MD (0 101	ND (0.10)	NO (0 10)	NO (0 10)	MD (0.10) ND (7.5)	MD (0.10)	ND (0.10)	NO (0.10)	MD (0 16)	NO (6.10)	MD (0.10)	MD (6.16)	MD (0,10)	0.19	NO 10.18	MD (0,10)	(O) 0 (O)	NO TO TO	NS
esel Components (DRO EPA 8) PH (C06-C10) (GRO EPA 80158	3 Mod)	mg/kg mg/kg	13.3 NO (9.2)	HD (10.1)	ND (7.6)	HO /13.01	NG / FG.23	AD (7.5) AD (8.6)	MD (9.0)	AID (7:3) AID (9:5)	ND (7.7)	ND (151)	NO (93)	ND (8.8)	ND (17.3)	ND (14.0)	NO (10 7)	NO 110.5	10791	NS (S.S	NS NS
hylene Glycol (8015)		mg/kg	ND (10.0)	HC (10.0)	NO (10.01	NO (10.0)	MO.(10.0)	MD (10.01	ND (10.0)	NO (10.0)	ND (10.01	NO (16.0)	NOTICO:	NO (10.0)	10 01 1 GM	KD (10.9)	ND (10.0)	ND (100	No rigo	NO ( 10.0)	1,400
etals (6010B/7471) uminum	Web Street	mg/kg	12,200	9,610	12,900	10,300	10,100	13,200	12.400	11,500	13,400	11 900	11,600	11 400	12,900	12,700	12,200	11,000	9,160	12,200	190,000
timony		mg/kg	MD (0.45)	HD (0.52)	NO (0.40)	0.85	(C= 0) GM	0.59	NO (0 46)	0.4	1.1	11,900 0.69	0.86	11,400 0.74	MD (0.31)	(ND / C.36)	NO (0.47)	195 G1 GN	NO 0.321	NO (0.43)	27
rium		mg/kg mg/kg	10.5	108	7.2 91.8	8.2 119	6 121	7.3 134	7.9 164	137	10.1	9.2	71.7	9.6	8.3 122	6.8 128	8.2 139	8.6 149	7,4 83.8	8.5	12 8,200
ryllium		mg/kg	0.62	0.52	0.58	0.61	0.45	0.64	0.63	0.7	0.67	0.72	0.63	0.67	0.6	0.66	0.68	0.6	0.59	0.73	320
on		mg/kg	7.7 0.41	6.7	7,1 0.38	7.5 0.44	6.2 0.32	8.4 0.32	6.4 0.32	6.4 0.33	6.8 0.24	6.7 0.22	6.7 0.31	7.3 0.38	7.7	7.8 0.38	8.7	7.6	7.1 0.31	8.8	1,900
dmlum		mg/kg mg/kg	932	0.25 1120	667	1070	1220	1120	1120	1130	543	1130	508	1080	0.35 1010	1230	0.28 1350	0.41	1380	1220	NS NS
romium		mg/kg	14.5	12.3	14.4	12.6	10.9	16.4	13.9	14.2	16.1	14.3	15	14.4	15,1	15.8	15.5	13.8	12.6	15.2	190,000
balt	_	mg/kg mg/kg	11.8	9.9 12.5	12.1 8.7	12.9 16.1	7.3 8.3	9.9 17.7	11 14.3	12.1	10.3	12.3 25.9	11.3 12.9	11.4 16.9	11.4	11 18.4	11.5 17.3	11.5	9.7 13.8	12.3 19.8	50 8,100
)		mg/kg	26,700	21,000	25,500	23,500	17,000	26,100	24,000	25,500	28,400	25,900	26.500	25,700	26,900	25,300	26,500	25,000	22,400	27,500	150,000
d mesium		mg/kg	3,320	8.8 3,200	12,4	12.4 3,370	13.6 2,120	10.4 3,990	13.1 3,280	11.5 3,820	12.2 3,480	13.8 3.970	3,910	12.5 3,700	12.5 3.590	3,980	4,080	12.2 3.860	8.3 3.310	12.3 4,100	450 NS
ganese		mg/kg mg/kg	579	545 NO (2.1)	631	739	758 ND (6.7	515	640 AID (1.8)	586	587	680	608	558	503	525	513	568	500 MD (1.3)	706	2,000
ybdenum		mg/kg	NO (1,3)		ND (1.6) 14.5	ND (1.9)		NO.(1.5)		ND (1.3)	ND (2.3)	HD(1.7)	MD (1.75	MD (1.7)	MD (1.3)	NO(12)	MD (Y 9)	12(14)		NO (11.7)	650 650
kel assium		mg/kg mg/kg	17.8	18.5	1,260	21.4 1,490	1,180	21.8 1,650	18.3	22.8 1,710	18.3	1,740	1,370	21.9 1,630	18.9 1,580	22.5 1,850	1,940	22.6 1.670	20.9 1,520	24.1	650 NS
nium		mg/kg	ND (5,45)	NO (0 52)	MD (G.40)	ND (0.47)	NG (0.43)	NO (0 e1)	ND (0.46) ND (0.13)	ND (0.33)	AD (0.57) HQ (0.23)	NO (0.43)	MO (0 43)	MD (C.42)	(16.0) CM	(0.0.0) C/4	MD (8.47)	ND (0.38)	NO (0.32)	HD 10.43	26 84
um		mg/kg mg/kg	0,53 hiD /4461	0.46 NO (525)	0.55 ND (400)	0.5 NO 1474	0.48 NO 435	0.4 NO (407)	ND (480)	MD (0.13)	ND (587)	NO (0.17)	NO (0 17) HO (425)	0.23 MD (<18)	0.28 ND (314)	0.25 (ID (302)	0.28 NO (466)	0.24 FIG (359)	0.22 >D/3(6)	0.28 NO (425)	NS NS
llium		mg/kg	ND (1.8)	110 (2.1)	NO (1.8)	NO 11.91	NO.(1.7)	ND (1.5)	NO (1.8)	ND (6.3)	SD (2.3)	NEW 11 77	ND (1,73	NO (1.7)	MD 1333	MD (4.7)	ND (1.9)	HO SEA	NO(13)	ND (* E)	14
adium		mg/kg mg/kg	18.7 53.8	12.7	19.4 49.5	14.6 51.5	16.4 53.5	20.5 59	18,1 55.5	15.3 55.7	21.1 52.8	15.4 57.8	14.4 50.7	16.1 53.9	19.1 56.4	16.1 58.7	16.6 59.4	14.2 59.5	13.1 48.3	16.1 59.4	1,500 12,000
rcury		mg/kg	HD 10 111	NO (0 11)	ND 70.71	ND (3.10)	ND (0 34)	NO (S.14)	NO (0.14)	ND (9.11)	ND (0.11)	MD (0 11)	ND (0,10)	ND (0.14)	ND (0.10)	NO (0.11)	NO (9 (9)	(±1,0) G/4	MD (C.101	NO (0.10)	10
Cs (8260)		APPART TO	100 10 60 (0)	MD (3.3047)	MD10.00511	112 to 80 mil	NO (DISOLO)	ND /5,60581	ND 15.93461	1000000	ND (0.0047)	112 to 2018	L sum on annua.	NG (8 9048:	ND (0.0035)	110 TO 00 CO	LIE IS DOING	NO (5 0050)	NO 13 00481	1 him (0 0047)	20
1-Trichloroethane 2,2-Tetrachloroethane		mg/kg mg/kg	HD (0.0042)	ND (5.00+7)	ND 10.00511	NO (0 0049)	NO (0.0043)	NC (0.0058)	ND (0.0046)	ND /3.00471	MD (0.2047)	MD 10.00481	NO 10,0046;	NO 10 0045	NO 10 00351	ND 50 00481	NO 10 00491	NO 40.00801	HD 10.0046	ND 10.00-31	0.08
2-Trichloroethane		mg/kg	HD /D.0048}	NO 0.3047)	ND (0.0051)	(4D (0.0049)	NO :5.0043)	(88000 C1 GH	NO 10 (045)	NO 10 00471	NO (0.00473	MD (0,0048)	ND-10/00431	NO 12 0048.	WD (0.0055)	NG /5 00481	MD (0 0049)	NO 10.00501	MD (1) 00461	MD (0.0043)	0.5 3.1
Dichloroethane Dichloroethene		mg/kg mg/kg	ND (0.0345)	ND 10.00471	NO 10,005	NO 10.00481	NO 10 00401	ND 10 00581	NO 10.00481	ND 10.00471	NO 10 00471	PED 19.00PB	MD (0.0048)	ND 10 00461	NO (0.0066)	ND (0.0048)	40 10 00491	ND (0,0050)	NO 10 0048	HD://C 0043	0.7
4-Trimethylbenzene		ma/kg	NO 19 8949,	MO 15 65471	NO 0.005 (1	MD 10,00453	ND /12.00-31	MD 10 00631	ND :0.0046)	MD (0.0047)	NO (0.0047)	NO 70 0046	HD (0.0548)	NO 10,20461	%⊃ (0,0085)	ND (0,5048)	NE (0.0049)	NG 19,00801	HE 19 09461	NO (0 80=0)	8.4
Dichlorobenzene Dichloroethane	-	mg/kg mg/kg	12×00 01 CM	MC (0.0047)	ND 10.00813 ND 10.80613	NO 10.00481	40 (0.0043)	WD 70.0068	(8400.01 CM) (8400.01 CM	HD (0.0047)	40 (0,0047) 40 (0,0047)	ND (0.0049)	NO (0.0046)	MD (0.0045)	MD (0.0068) MD (0.0085)	MD (0 6048)	NO 10 09493	MG (0.0030)	#5 (0.0048)	NO (0 0043)	0.5
-Dichloroethene (Total)		mg/kg	MD (0.0098)	15500.01 CM	NO (0.0103)	MD (0.0068)	ND (0.0085)	NO (0.0116)	NO (0.0093)	ND (0.009a)	ND (0,00941	MD (0 0095)	HD (0.0091)	N-D (0 0001)	MD (0.0130)	ND (0.0098)	ND (9.0098)	ND 10 0099	HD (9 6891)	NS (0.0088)	73
-Dichloropropane		mg/kg	MC 76 (049)	NE 40 COATY	ND (0 0031)	ARD 10 CO491	ND (6.0043)	ND 10.0059	15400 01 CH	NO (0.89(7) NO (0.89(7)	NO (0.00e7)	NO (0 0048)	NO (0 0046)	ND (0.0046)	NO (0.0056)	HD (0.0045)	MC (0.0049)	NC 10 0050)	MD 10 0046	ND (0 00431	0.6
5-Trimethylbenzene Dichlorobenzene		ma/ka ma/ka	MD (0.0049)	MC (0.0047)	NO (0.005°)	ND 0.0049	NO 15,0040	PID (0.0053)	ND 0.00481	NO (0.0047)	10.00471	NO 10 CO48	HO (0 0046)	HD (0 CS-8	MO:0.0055	HD (0.0048)	NO (0.0049)	ND (0.0050	-K2 (6 6248)	110 10 0045	61
Dichlorobenzene		mg/kg	MD (0:0648)	ND (3.0047)	N 2 (0.0051)	ND (0.0049)	MB (0.00431	MD (0.8059)	NO (0.0048)	MO 10 00471	ND (0.0047)	NO (0.0648) NO (0.0068)	MD (0.0048)	IBE00 01 DK	HD (0.0088)	HD (0 0048)	F.C (C 0049)	ND 10 0050	HID (8 0048)	200 (0 0243)	10 400
utanone (MEK)		mg/kg mg/kg	AC C 3395	VD (0.0093)	NO 0.0103	NO 0.00981	NO 10 100651	ND (0.0116)	0.0108 FID (0.0090)	ND (0.0095)	NO 10.00341	M2 0 2098	0.0104	NO 13 009	NO 0 0 30	NO 10 0096	HO /5 00981	HD 10.0039	ND (3 0001	ND 10 2036	1.1
lethyl-2-pentanone (MIBK)		ma/kg	MD (0.0088)	NO 02.00931	11210.0100	/8906.0 GK	(#800.00 Cit)	49 19 21 181	NO (0,0090)	NG (0.0095)	(ABBC,D) CM	140 (0.0095)	HD (0.0091)	NO (0.0095)	NE (C 3130	MD (0.3096.	*#D (5 0298)	ND (9 0099)	MD://9.0097/	NO 10 5085	290
itone izene		mg/kg	0.0529	0.0248	0.119	0.0112	0.055	0.0292	8080.0	0.0859	0.106	0.0778	0.106	0.047	0.105	MD 0 0095	0.0110	0.0201	0.0119	0.0239	3,300
modichloromethane		mg/kg	NG 70,5649	NC 76 3647	NO. (0.0051)	MD 10,00491	110 10 10 10 10	MD (0.7058)	340 (0.0346)	\$10 (\$ 0047)	4076.63ah	PHDC 0 3049	ND /0 00435	AC (0.0046)	NO (0.0068)	9C (0.6U-8	AS 10 CO13	NG 10 (0330)	HC (5.05HB)	2540 0 CH	8
moform momethane		mg/kg mg/kg	PAGE 03 0249	NO 10 OSATY	AID 0.0051	MC 13 00/101	NO (5.0043)	NO 10.00501	NO 10 00481	NO 50,004T1	MD 19.80473	ND 19 8548	NO 10 004E	WD (S 5948)	MD (0.0055)	NO GROVE	NO 12 (549)	AC /0.00501	NO 10 0048	NE 5 55430	8
bon disulfide		mg/kg	MD 0.00-3	MO 12 00471	HO 73 003**	NO (0.0049)	360 (9.3043)	NO 15 30581	NO (0.05451	NO (0.3047)	Y7-90 01-CM	ND-18 2018/	AD70.0048	TO 10 00451	NS (9.938	10 13 3048	PE 10 22/5	#D 15.00807	NO 10 00461	NO 13 GG43.	150
rbon tetrachloride orobenzene		mg/kg	NG (0.0049	NO DESCRIPTION	NO 12 00511	NO 2,0049)	ND (0.00-3)	NO 12 3058	HD (3.0045)	ND/9.00471	NO (0.0047)	NO 0.0048,	-3430 94 GW	NO 12 2945	NO 10 2038	HD 10 00=8.	NO 10,0049	NE (0.0050)	NO 13 00461	4E 0.0043	0.5
foroethane		mg/kg	NG COOCHS	ND (0.0047)	80 0.005	X62 (C.05=9)	MD (0.0043	NO 0.0058\	N2 (0.00+8)	NO MODELL	10.000	NO 10 6048	MD (0.2048)	HD 10 0048)	NG (2 0085)	ND (0 0048)	HED 10 2019	ND 0.5080	ND / 2 95/48	HD 10 0043	23
loroform		mg/kg	WC 6 37-10	NO COLAT	10 1.02817 10 /0 400	MD (0.0048)	HD /5 3043-	20 9 JS657	HD (0.0043-	10 1000	10 (0.0047)	MC 9 5948,	HD 10 0943	40 10 0045)	NO 19 30961	3#00 01 3A	MO 10 0000	D10.3030	NO 3 1/45	NO 10 20421	8
oromethane -1,2-Dichloroethene		mg/kg mg/kg	NO 10 00491	NO 10 3647	NO 0,0051	2 0 10 0049	MS 12:0040.	NO (0.0008)	ND (6.30-81	MC (5.0047)	NO COCK	3100 0 GW	M3 0 3048	HE TO COME	ND /0 0098	XD (0.00)6	VD '0 5345	A-5 HS 304C)	MD 710045	ND (0 0043)	7
1.3-Dichtoropropene		mg/kg	ND 0 0048	ND 73.304	NO 10 008 1	NO (2.00491	MD (0.3043)	NO 10 20581	ND (9.0046)	MD /6 DOIT)	NO 75 35=71	NO 0 03481	NO (0 0046)	MD (0.0048)	NO 10 0035	-D-0.20+3	HD 10 0049	>0 (0.0050)	10.00045	MD (0.0343)	0.66
omochloromethane dbenzene		ma/ka ma/ka	-5 0.0049	NO.40 00471	MO10 005	NO IDEGRADI	NO 6 75-3	NO 0 3058	NO 0.00451	ND / 0 CO+71	*iO fg 5047:	HD 10 0048	NO 20048	NG /0 0048	ND (0.0085) ND (0.0085)	NO 10 2048	HO (0 0049)	AD 10 0050	ND (0 0045	XE 39 0549	8 70
propylbenzene (Cumene)		ma/kg	NO 10,00481	NO 10 00471	MD /2 008 11	ND 10.0045	NO (0.0043	NO (0.0058)	ND /9.30491	NG 10,004TH	NO 12,05471	10.0.00461	NO (5 0048)	ND /0 0046	MO 10 0085.	HD (0.0048)	NO 10,0043	AD (0.0050)	NC13 00451	4970 3943.	600
-Xylene ylene Chloride		ma/kg ma/kg	MC 10 00985	HD 10.00331	MO (0 0 103)	MD (0.0088)	MD (0.0083)	MO 10 01 18;	HO 10 00931	ND 10 00951	HD (0.0094)	NO (9 00951	#10 / 0 009 / 1 #10 / 0 009 / 1	ND 40 00911	NO 10 01301	MD /0 90981	MO 10 3088	ND /0 0099	#6/40 009/11 #400 00 C-4	MD 75 30851	1,000°
nylene Chloride		ma/kq ma/kq	NE /0 00481	NO (6 0067)	AG 10 70511	NO 17 0049	ND 10 30431	ND 10.0056	15/2.0045	NO (0.0047)	NO 12 00=71	HD /0.0348	AID 10 00461	HD (0 0049)	WD (0.0685)	40 /0 0046	AD /2 (0.48)	P-0 /0 0030	/10 /0 CO451	*D/0.00x3	2
nthalene		mg/kg	NO 10 00451	ND/03547	HD 10.0051	NE (0.0049)	4D /0.0043	HE (0.0088)	NO (0.0046)	ND 10.0047	HE 0 0047	NO 40,00481	+10 /0 00483	NO 00 0045	ND 10,00851	ND (5.5048)	ND 70 55491	NO 70 6850	+5 °C 5346	HD (0.0040)	25 950
tylbenzene opylbenzene		mg/kg mg/kg	MS (0,0049)	NO (0 0047)	ND 12 3061	HD (0.0049)	NO 10 0043	NO 10 00581	NO 10 20481	NO 19.50471	ND (0.0047	ND (3.0348)	NG (5.3548)	NO 10.0046	NO 70,00851	A.C. (0.0049)	NO 70 0049	NO.10.00401	NO (0.0048)	NO (0 0040)	290
lene		mg/kg	NO 10 3049	MG 0 30477	VC (0.003	1/2 / 2.00481	1010.30.31	18300 0 CM	HO (1.0948)	ND (0.0047)	ND (0.0007)	MC / 9.3048	NO (0.0048)	ND 12 0043	NO 19,00851	MD (0 3048)	NO 10 00481	NG 10 0085	10/02043	45.15.5543	1,000°
propyltoluene		mg/kg mg/kg	MD:00549	NO 10 0017	NO.02081	NO /0.0048;	HO 0.00431	6500,010 CH	NO 10 00451	30 (0.0047)	*E-05.01 GW	ND (0.0048)	MC -0 0046)	HD (0 0048)	KD (5 0035)	NO (9.0048)	WC 0.0049	60 (0 0050)	NO 10 0049	NO 10 0063	NS 350
Butylbenzene ene		mg/kg	12H00.00 GW	ND 10.004T1	ND (0.0051)	ND 0.3049	NG 13.0243	NO (0.0058)	NO (0.00-8)	ND (0.0047)	NO (0.0047)	NO 10 0048	210 rg 9048	ND 13.0048	HG (0 0086)	ND (0 0048)	MD (0.0348)	ND (0 0050)	8 PGB 0+C+	HD 19.0843)	24
achlaroethene		mg/kg	NO (0.0049)	NO (0.0007)	90 (0.008)	ND (0.3049)	NE (0.0043)	ND (0.3388)	NO 10,00461	HD (0.0047)	ND (0.3047)	ND (0.0048)	NO (9 9348)	MD49 3946;	NO 2 200861	NO 10 0045	MD 10 5549	FO (0.0030	NC 10 0048	MP (C 0045	0.5
iene TAL BTEX		ma/kq ma/kq	0.0198 VD (0.0295)	ND (0.025	NO 0.5309	HD (0.0048	NO (0.0255)	NO (0.0058)	0.0225 NG 10.0273	NO (0.0027)	NO 10.0283	MO 10 0285	NO 10 0348,	NO 10 0274	#E 10 0384	ND (9 0230)	AD (0.0298)	#D70 0259	45 (5 (273	ND 10 025	100 NS
is-1,2-Dichloroethene		mg/kg	HD (0.0049)	ND (0.0047)	42 (0,005 l)	ME2 (0.0049)	HD (0.0043)	ME (0.0038)	42 (C:3045)	AID (0.0047)	1-0.00d7	PID 10 0048,	PIC 10 0048)	ME 10 0046	ND (0.0085)	MS (0.0048)	ND (0 0049)	ND (0 0050)	HD 10,0046	NO 10 0043	10
ns-1,3-Dichloropropene		mg/kg	ND (0.0049)	NO 10 0047)	NO 10 005	NO 10.00491	HD 10 95431	40 (0.0053)	NO (0.0046)	NO 10.00471	MD (0.00471	8-02 C+ OK	40 (0.0045)	N5 (0.0048)	ND (0.0095)	ND (0.0048	NO 19 9549	ND (0.5050)	HD:20045	71G 1G 00A3;	0.66
hloroethene yl chloride		mg/kg mg/kg	ND (0.0049)	NO /3.0047	MD (0.305)	AD (0.0049)	FID (0.0643)	143 /0.3058	ND (9.0045)	MO (0.0047)	MD 10.0047	NO 10 00#8	HD-0 0045	NG (0 0046)	ND 10 00851	HD (0.0048)	ND (0.0949)	P.C 19 6050	NO (5 0548)	ND (0.0043)	0.2
ne (Total)		ma/kg	351/6 51/6 ·	240.70.314	SID /D 03500	HO /0 04671	W75 (0 0459)	NG /6 85237	WELES 21901	300,000,04223	MENTE BY (2)	260,000,000	365 (6 D) 27:	2810.01.035	46535.0153	NO:00145	NEW PORTAGE	NEWS BARRY	WELL 0197:	202100000	1,000

Page 1 =+2

DIM0209034 DIM0209121

	Location Sample Identification		Brooks 1H BRK-1H-P1A	Brooks 1H BRK-1H-P1B	Brooks 1H BRK-1H-P2A	Brooks 1H BRK-1H-P2B	Brooks 1H BRK-1H-P3A	Brooks 1H BRK-1H-P3B	Brooks 1H BRK-1H-P4A	Brooks 1H BRK-1H-P4B	Brooks 1H BRK-1H-P5A	Brooks 1H BRK-1H-P5B	Brocks 1H BRK-1H-P6A	Brooks 1H BRK-1H-P6B	Brooks 1H BRK-1H-P7A	Brooks 1H BRK-1H-P7B	Brooks 1H BRK-1H-P8A	Brooks 1H BRK-1H-P8B	Brooks 1H BRK-1H-P9A	Brooks 1H BRK-1H-P9B	SOIL Residential Used Aquifer MSCs
	Sample Date		5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	Aquilet moos
Parameter SVQCs (8270)		Units	Land Control of the land															SHEET SHEET			
1,2,4-Trichlorobenze	ene	mg/kg	PID (0.372)	ND /0.389)	NO 10 3811	MC (0.358)	hD (0 37)	NO 10 372	MC (0.380)	ND (0.359)	ND (0.387)	NO (0.371)	AID (0.353)	ND /9.3831	MD /5.3631	NO (0.399)	ND (0.383)	PD / 0.2601	NO (6 358)	NO (0.382)	27
1.2-Dichlorobenzene	e	mg/ka	NO (0.072)	ND:0.0897	1150 (0.381)	NO 10 3651	ND (0.37)	NO 10 3725	NO (0 093)	MD (0.359)	ND (0.357)	NO (6.371)	NO (0.353)	ND 19.3621	MD 10 3631	WD 70 3591	NO / 0 3831	ND (0.050+	AD (0,359)	HO 10.3631	60
1.3-Dichlorobenzene	e	mg/kg	MD (0.372)	ND (0.369)	MD (G 384)	MD (0 355)	ND (0.37	ND (0 872)	MD (0.383)	NO (0.359)	ND (0.387)	AC (0.371)	ND (9.353)	NO (0.383)	ND (0.393)	ND (0.369)	ND (0.383)	ND (0.380)	MD / 0 359 \	ND (0.363)	61
1.4-Dichlorobenzene 2.4.5-Trichlorophene	e ol	mg/kg mg/kg	MD (0.50)	NO 10 3691 NO 10 9241	ND (0 3811 ND (0 983)	ND (0.355)	NO (0.826)	MD (0.372)	MD (0 393)	ND (0.899)	HD (0.387)	MD (0.371)	NO 18 3531 NO 18 8831	ND (0.393)	MD (0.383)	ND (0.369)	NO (0.363) 1702 01 CM	ND (0.380)	*C (0.899)	ND (0.363) ND (0.807)	10 2,300
2,4.6-Trichloropheno	ol ol	mg/kg	MD (0.372)	NO (0.369)	MD 10 38 1	MD (0.355)	HD (0.37)	ND (0 172)	MD (0.393)	ND (0.359)	ND (0.387)	10/037	NO 10 3431	10 (0.363)	HD (9.383)	20010 359	ND 19.3831	ND (0.350)	ND (0.358)	MD (0 383	11
2,4-Dichlorophenol		mg/kg	ND (0.372)	MC (0.389)	ND 10 3811	MC (0 355)	ME (0.37)	ND 10 372	ND (0.390)	NC (0.359)	ND (0 387)	ND (6.371)	ND (6.353)	ND (0.363)	MO (0.363)	ND (0.359)	NO 10 3631	NO 19,360	ND (0.359)	NO (0.383)	2
2,4-Dimethylphenol		ma/kg	MD (0.372)	ND (0.369)	NO (0.381)	NO 10 355	ND 10 371	WD (0.372)	MD (0.383)	ND (0.359)	ND (0.387)	WD (9.371)	≈D/9,3531	NO (0.353)	MO/0.383)	ND (0.359)	(D) (9, 363)	ND (0.353)	MD (9.359)	MD 10 3631	73
2,4-Dinitrophenal 2,4-Dinitrotoluene	-	mg/kg mg/kg	MS (0.93)	ND (0.369)	ND (0.963) NO (0.361)	NO 70 888,	NO (0 523)	#D10 831	MC (0.964)	ND (0 899)	MD (0 369) MD (0 367)	MD / 5.928	NO (0.382)	(802.01 CM	NO (0 309)	MD (0.922)	ND 15.5071	**D (0.900)	MD 10 8887	100 (0.807)	7.3 0.21
2,6-Dinitrotoluene	-	mg/kg	WD (0.372)	MD (0.369)	ND (0.361)	NO 70 365	ND 10 371	HC (0 372)	NO (0.393)	MD (0.359)	MD (0.387)	AD (0.371)	ND (0.353)	ND (0.363)	NO (5.363)	NO (0.389)	NO (0.393) NC (0.383)	AD70.3801	AD 10 3591	HD (0 363)	3.7
2-Chloronaphthalene	0	ma/kg	NO:0.3721	NO/0359	NO 40 381)	ND (0.383)	NO (0.07)	ND (0.372)	MC (0 393)	HD (0 359)	ND (0.387)	NO (0.371)	ND (0.353)	ND (0.360)	MD (0.393)	ND (6.359)	ND 10.363	ND 10 3501	FC (0.359)	MD (0.383)	6,200
2-Chlorophenol		mg/kg	NC (0.372)	HD (9 369)	MD (0.381)	ND (0.355	MD (0.37)	ME (0.372)	ND (0.393)	ND (0.359)	MD (0.38%)	ND (0.371)	ND (9.363)	ND (0.388)	MD (0.383)	NO:03691	NO (0.383)	AD (6.380)	ND (0.356)	ND /9,363	4.4
2-Methylnaphthalens 2-Methylphenol(o-Cr	e e	mg/kg	NO (0 372)	NE 75 369	NO (6 281)	MO (0 355)	ND:0.373	NID (0.272)	ND (0.383)	NO (0.359)	NO (0.367)	NO (0.371)	ND (0.363)	ND (0,363)	ND 40 3831	MD (0.369)	PD (0.383)	ND (0.380)	NO (0.369)	ND (0.383)	600
2-Methylphenol(o-Cr 2-Nitroaniline		mg/kg mg/kg	NO (0 372)	ND (0.369)	ND (0 381) ND (0 953)	MD (0.355)	ND (0.37)	ND (0.372)	NO (0 393) NO (0 984)	ND (0.359)	ND (0.367) ND (0.969)	ND (0.371)	HD (0.353) HD (0.862)	ND (0.363)	MD (0.383)	NO (0.369)	MD (0.363) MD (0.907)	ND (0.353)	ND (0.359)	ND (0.363)	180
2-Nitrophenol		mg/kg	HD/0.3725	NO 19 385	MD (0.38)	ND (0 355)	NO 10 371	MD (0.372)	MD (0.393)	MD /0 359	NO (0 387)	ND(0.371)	ND (0.353)	4 C 19 363	NO (0.3931	ND (0.389)	4D (0.363)	PD (0.393)	NO 70,3591	WD / 0.363;	29
3&4-Methylphenol(m	n&p Cresol)	mg/kg	MS (6 F64)	ND/07381	ND (0.752)	NO (0.74)	NO (0 74)	NO (0.744)	NG /0.788	NO (0.719)	MO (0 775)	HD (0.742)	ND (0.705)	ND (0.726)	NO 19 7271	NO (0.737)	NC 10.7251	ND(0.719)	ND 10 719)	ND (0.725)	187
3,3'-Dichlorabenzidir		mg/kg	WO (6 372)	ND (0.359)	NE (0.381)	ND (0.355)	HC /0 371	NO 10 3721	MD (0.080)	MC (0.359)	ND (0.387)	MD (0.371)	ND (0.353)	MD (0.3531	MD (0.353)	MO (0.369)	ND (0.383)	ND 10.3801	ND (0.359)	ND (0.383)	8.3
3-Nitroaniline 4.6-Dinitro-2-methyla	phonol	mg/kg	MD (0 93)	NO (0 924)	HD (0.953)	MC (0 868) AC (0 868)	ND (0 828) ND (0 928)	MD (0.93)	HO (0.984)	HO (0.899)	ND (0.959)	ND (0.928)	ND (0.882)	MD (0.903)	1909.01 CM	NO 10,922	ND (0,907)	NO 10.9001	NO (0.899)	NO (0.907)	1.1 0.37
4-Bromophenylphen	lyl ether	mg/kg	NC (0.372)	NO 0 3691	ND (0.361)	HO (0 353)	NO (0 37)	ND (0.372)	ND (0.293)	NO (0.359)	ND (0 387)	NO:03711	MD (0.353)	ND:0(903)	ND (0.383)	ND 70.389	#D (0.383)	NO (0.350)	KD 10 3591	NO:10,363\	NS NS
4-Chloro-3-methylph	nengl	mg/kg	MD (0.372)	MD (0.362)	MD (0.381)	140 (0.365)	HD (0.37)	ND (0 372)	MD (0.393)	ND (0.359)	ND (0.387)	NO (0.371)	ND (0.353)	NO (0.383)	NC (0.363)	NO (0.369)	MD / 0.353	ND(0 399)	NO (0 359)	MO /0.3633	37
4-Chloroaniline		mg/kg	MD/0 372x	MD 70 3951	ND (0.381)	HD (0 355)	MD (0.37)	HD (0.372)	MC (0.393)	ND (0 359)	HD (0.387)	ND (0.37	WD (0.353)	MD (0 363)	NO 10,363	NO (0.369)	ND (0.383)	PO (0.365)	MD (0.239)	NO (0.393)	0.42
4-Chlorophenylphen	nyl ether	mg/kg	NO (0.83)	40 /0 089) 40 /0 024	MD (0.381) MC (0.363)	MD (0.355)	ND (0.926)	NO (0.372)	MO (0.393)	HO 10 3591	HC (0.387)	MD (0.37%)	MD (0.383)	NO 19 3531	ND (0.383)	NO (0.389)	NO (0.353)	ND (C 365)	NO (0.389)	NO (0.383)	NS 3.3
4-Nitroaniline 4-Nitrophenol		mg/kg mg/kg	MO (0 S3)	NO 10 32=1	MD 10 3631	MD (C 8881	ND (0.32)	NO (0.93)	MD (0.393)	MD (0.399)	NO (0 969)	NO (0.928)	ND (0 882)	FD (0.908)	NO 10 3631	ND (0.382)	NO (0 907)	NEL (0.300)	*ID (0.899)	ND (0.383)	6.5
Acenaphthene		mg/kg	MD (0.372)	MD 10 0891	18E0'08	AD (0.353)	NG 10 371	SE 70 372	NO (0.393)	HD (0.369)	ND (0.387)	ND (0.37-1	AD (0.353)	MO (0.363)	NO (0.383)	NO (0.389)	ND (0.383)	NO 10 580%	NC (0,369)	NO (0.383)	2,700
Acenaphthylens		ma/kg	157E D) ON	MD +0 3891	ND (6 381)	MD (6 355)	AG (0.37)	NO (0.372)	NO (0 383)	MD (0 359)	ND (0 367)	MD (0.37-1	VE 10 3531	ND (0.353)	ND /0.3531	MC 10,369	ND (0.363)	MO (0.350)	ND (0.059)	NC 10 363:	2,500
Anthracene		mg/kg	PID 10 3721	MD (C 369)	ND 10 3811	MD (0.355)	MC (0.37)	NC (0.372)	HID (0 393)	NO 10 3591	MD (0 367)	ND10.371)	MD (0.353)	MO (0 3631	ND 19.3631	NO (5.363)	MC 10 263)	ND (0.380)	NO 10,359)	ND 16.3835	350
Benzo(a)anthracene Benzo(a)pyrene		mg/kg mg/kg	510 (0.072)	MD (0.365)	MD (0.361)	NO (0 355)	NO (0.37)	NO (0.372)	MD (0.383)	HQ (0.369)	ND (0.387)	ND 10.3711	MD (0.353)	NO (0.363)	NO (0.383)	NO (0.389)	NO (0.363)	NO 10 3601	MD (0.359)	MD (0.363) ND (0.363)	5.7 0.57
Benzo(b)fluoranthen	ne	mg/kg	₩D (9.372)	ND (0.359)	ND 10 3611	**D (0 353	40 70 371 40 70 370	10 10 3721	ND 10 393	ND (0.358)	NO 19 3871	ND (0.371)	NO (0.363	NO 17 3531	NO /1.363)	ND (6.369)	NO 10, 3631	MD (0.360)	ND 10.359	NO (0.383)	5.7
Benzo(g,h,i)pervlene		mg/kg	NO 10 3731	ND (0.088)	ND (0.361)	ND (0 355)	HO (0.371	NO:0372	HD (0-393)	KD (0.359)	ND (0.387)	NO (0.371)	MD (0.3531	HD (0.353)	ND (0.383)	NO 10.3581	ND (0.363)	NO (0.350)	ND 10 3591	MD 10.383)	180
Benzo(k)fluoranthen	ne	mg/kg	ND (0.372)	MD (0.389)	NO (9.381)	ND (8 355)	AD (0.37)	NO (0.332)	MD (0.383)	ND (0.369)	ND (0.187)	HD 69:37*1	MD (0,353)	NO 10 3831	NO:(0.963)	188E 01 CM	NO (0.393)	NO 19,3661	39C.0.CN	MD 79 3831	57
Benzyl sicohol		ma/ko	ND (0.372)	NO 10 3891	HD (0 381)	ND (0.355)	NO.0371	MO1003721	NO (0.393)	NC (0.368)	MD (0.367)	ND:0.3711	4D (0.553)	AO (9.383)	ND 19.383 (	∾D (0.389)	MD (6,363)	NO /0.353	+D (0.369)	MD (0.363) MD (0.363)	1,800
bis(2-Chloroethoxy)r bis(2-Chloroethyl) et		mg/kg mg/kg	HC 9372	NC (0 169)	MD (0.381)	ND (0 365)	NO/0.371	HO 10 3721	NO (0.369)	NO 70 3681 NO 70 368	NO (0.387)	NO 10.37 1	ND (0.352)	NO 10 3531	NO /0 3631	NO (0.369)	NO (0.383)	NO 19 3801	X275 3891	NO (9,383)	0.015
bis(2-Chloroisopropy		ma/ka	WD+0-3723	MD (5/365)	MD (0 381)	PrD (0.358)	NO/0377	MD (0.372)	NO (0.3931	NO (0 359)	NO (0.387)	ND (0.37")	ND /C 3531	NC /2 3831	MD 10 3831	NO (0.369)	MD (0.363)	00/0.360	4070.359	MD 19 3631	30
bis(2-Ethylhexyl)ohth	halate	mg/kg	510 to 3x5.	- 0 fd 389 k	MD (0 38" F	MD (0.365)	NE (22%)	WO (0.372)	MD / 0 393	HB (0.359)	NO (0.367)	NO (0.371)	ND 10 3531	ND (0.353)	123E 01 GM	n0/9,3891	NO 0.3531	NO 10,080	MO /0 3691	NO 19 0801	130
Butylbenzylohthalate	0	ma/kq	MB (0.315)	MC 10 3391	ND (0.36*)	PID (0.355)	NO:10 071	MD (0.372)	HD (0.393)	PIO (0.089)	HD (0 352)	ND (5.37")	AD (G.363)	MD (0.383)	NO 0.383	MD 10.369"	(£98.0) (A)	HQ146 385	MD 10 359	MDY0.3631	3,000
Chrysene Dibenz(a,h)anthrace	200	ma/ka mg/ka	MD (2 379)	NC (0.389)	NO (0.381)	NG (0.365)	NO (0.37)	NO (0.372)	NC /0 3531	HD (0 359)	NO (0 387)	ND/03711	NO (0.353) NO (0.353)	ND (0.353)	MO (0.393)	NO 10,3881 NO 10,3881	MD (0.383)	NO 40,3801 NO 40,380	NO (5.389	ND 10.3837	230 0.57
Dibenzofuran	one -	mg/kg	NC 10 372	H2 10 360	#67157.3811	MD 10 355	N210 EE	-0.10.3721	HO (0.383)	NO 10 3591	NO 12 387-	NO 10 371	NO (0.353)	AD (C 383)	ND 10.383	NG/0388	40/9 363	HOVE 930	397 23 952+	MC-70 353v	95
Diethylphthalate		ma/kg	HQ 8 372	ND 10 389	N-D70 331 h	ALD KE 386	86/335	NO 10 3721	NO /9 393	NO 10 3501	NO 10 387)	*Q10371	ND (0.363)	AUC-10 380 -	HD (0.383	AD 70 369	MD/(0 383)	NO (0.252)	AD/10 359 ;	HO75.3931	2,900
Dimethylphthalate		mg/kg	MD 10 3721	ND 18 369:	P(D)(0:361)	AC (0.385)	N912311	NG 19 3721	MC 10 0932	10 10 3591	NO 10 38TV	3D (0.37%)	×3 (0.353)	790 (0.393)	E3E.0) C14	ND 177 0891	ND /9.383)	MD (0.230)	MC (0.369)	NO.10.3831	NS
Di-n-butylphthalate		mg/kg	m0 (C 372)	NO 0.3591	NO 10 381	4-D (0.385)	NO (0 37)	MD (0.373)	HD: 0 393	MC (0.359)	NO 19 3871	ND 40 3711	NO (0.353)	NO (0,383	MD m 383	MD 18.359	NO 10.383	40 (0.380)	NO 10 359	MD 10.383/	1,500
Di-n-octylphthalate Tuoranthene		mg/kg	HO (0.372)	HE 10 3601	MD (0 381)	NO 19 355	NO 10 37	MS 10 372	MD 10 357	#0 10 359 #0 10 359	AD 10 3871	AIGHEGE!	ND (0.353)	NO (0 383)	NO 10 3631	NO 10 353	NO 19 3831	ND (3.05)	NO.(0.352	MD /9 353,	8,800 3,200
Fluorene		mg/kg	HO (0.332)	NO 10 3591	PD 0 381;	ND10 355	NO 92 375	10:03:3	MD 70 393	ND 10 3591	ND (0.38*)	ND // 3714	MO (0 363)	ND (0.363)	ND /0.3831	41.0 TO 0.634	2.5.10.383:	MO (0.030)	NO (0 359)	NO (8 393)	3,000
fexachioro-1,3-buta		ma/kg	10 10 372	NO 0.359	A/C (C 38)	ND 10 3551	NO:0371	ND 0 3788	110 /0 393+	ME 15,3591	NO (0.387)	NO (0 37)	ND (0.383)	WO 78 363	7,010,083	AC (0.398)	MQ(60,382)	ND 10 3531	20 T 352	ND 18.8831	10
lexachlorebenzene		mg/kg	NO.10.072	NO 17,369	MO45 3817	ME 9 356	MO:0321	NO 15 372	#2/2302	110 10 350)	ND (0.381)	AD (0.371)	~ PD (0.353	NO 12 3831	100 (0.383)	AD70339:	AD 10 0331	NO 70 380	VC 70 169	NC /3.333	0.96
lexachiorocyclopen		mg/kg	NO 10 3701	235.010.0M	MD 10 381	MD 0 3881	MC 15 371	3-2 (0 (373°	HD 19 363.	10.0389	NO 10 387	WD 10 3711	\$3.65,353	VO / 6 283	KD/10383	NO 10 3591	MD (0.383)	MO 10 380	NO 10 3491	NO 10 0531	91 0.56
dexachloroethane ndeno(1,2,3-cd)pyro		ma/ka ma/ka	NO 15 3201	VE IN SEC	P 70 38	30 10 365	NO.10 ST	MO 40 3731 NO 5 3231	HD 19 393:	NO 0 369	973 (C 387 9/3 (O 587)	MD (0.37)	MD (6 383)	NO 12 3831	NO 10 3831 NO 10 3831	VD 11 382	AC 10 1231	V 0 10 387/ NO 25 181	VD / 0 3821	V 0 (0 183)	5.7
aphorone		marka	VO 0375	M2-1389	40.038	3 3 355	NO. C 375	+C C 372	NO 0 353	HC 75 JBS	ND (0.387)	NS (0.57)	10/0363	A5 5 3 8	45/7 383	NO 40 CH2	VO /5 283	ACC-0 380	70 2.350 <sup>1</sup>	A(2) 10 293	10
Vaphthalene		mg/kg	NO 10 372	MC 12/359	NO 10 38*5	ACT (0.355)	NO 037	100332	40 0363	MO (0:359)	ND 10 3571	AD 10 574	2.10 363	NO 5382.	ND 0.387	NO/0 386	1273323	100/2.382	NO 19 359	KO (2.333)	25
Nitrobenzene		ma/kg	M2 10 3701	MC 12 3891	₩D (0.38°	NO 48 3551	VOID3.	≥i0 (0,370)	NO 10 393	MQ70-359	ND 19.357	NO (0.371	AD 00 3631	NO 40 383	NO/10 083	NO.10 389	NO 10 383	ME (0.390	NO CO SAG	NO (0.080)	7,3
I-Nitroso-di-n-propy		mg/kg mg/kg	N7:0378	HO (0.359	WD 10 35	NE 15 356	NE Oat	10/0 52	AC 5 357	HD 0359	WD 40 387	42 (2 22 C)	12.72.353	10 (0.383)	NO 10 053	107 7 359	AD (0.34)	MD 10 330	PC 10 353	NO.10 583.	0.0094
4-Nitrosodiphenylam entachlorophenol	ome	mg/kg mg/kg	in 19 491	1,315,002	W/2 (0 38	NO 10 30	345.45.535	NT 5 011	VO 0 393	30 0 353 30 10 200	AD 7 020	VE (6. 208	15 3 302	WE (6 103-	VO (0.000	NE 10 022	MT-10 SOT	NO 10 9031	90.65.959	NO.60 363-	5
henanthrene		mg/kg	HC1/0.3721	NO 10 1291	HC (0.391	NO 10 355	NO 10 375	10 10 272	NO 10 369	-AFD (0.358)	ND 10 387	ND (0.37)	#D 15 3831	AD19.3831	MD (0.383)	NO (8.359	4IC (0.383	AE (0.180	15,10 359	NO 5-383	10,000
henol		mg/kg	PD (0.372)	101035g	NO 0.33**	10 C355	→IC/17375	MD 0.372	00/0363	AQ 10 159	NO 10 33Th	//D // 37%	E 7.353	NO 10.3631	ND (0.353)	NOTE SEP	WO TO 1812	地位第一	10/13/59	AD*7 537;	200
yrene		ma/kg	man of the state o	6.70 ×15 /1600	Link See NO. 1	1074 101 122	STATE OF THE PERSON	NET-10 372	SUPPLIED STATE	S. Phys. S. Nath	NOT HISTORY									3 mg 20 K501	2,200

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DIM0209034 DIM0209122

Sample Identification		BROOKS 1H A	Brooks 1H B	Surfac	e Water Quality Cr	iteria <sup>1</sup>
Location Sample Date		<i>Upgradient</i> 12/8/2009	Downgradient 12/8/2009	Fish and Aquatic Life Criteria -	Fish and Aquatic Life Criteria -	Human Health Criteria
Parameter	UNITS			Chronic	Acute	
General Chemistry	MENTAL DIAL	WENT HOLD TO BE	PN DUALITY	STATE OF THE PARTY OF	AND THE RESERVE	MANAGE TO
pH (SM 4500-H+B)	pH units	7,5	7.3		-9.0	NS
TPH (C06-C10) (GRO EPA 8015B Mod)	υg/L	MD (200)	ND (306)	NS <sup>3</sup>	NS	NS
Diesel Components (DRO EPA 8015B Mod)	mg/L	MD (5 10)	ND (0.15)	NS	NS	NS
TPH (EPA 1664A)	mg/L	ND (4 a)	ND (4.9)	NS	NS	NS
Acidity (SM 2310B)	mg/L	NE (10 0)	MD (10 0)	NS	NS	NS NS
Alkalinity (SM 2320B) Ammonia (EPA 350.1)	mg/L mg/L	28.9 0.41	27.6 0.29	NS NS	NS NS	NS
TDS (SM 2540C)	mg/L	84	82	NS	NS	750
Chloride (SM 4500-CI-E)	mg/L	8.2	8.6	NS	NS	250
Metals (6010B/7471)		STREET, STREET	SANADA MARKANIA	DUCKEN PROPERTY	SAN END DESCRIPTION	AL SOCIAL PROPERTY.
Aluminum, Total	ug/L	151	427	NS	750	NS
Antimony, Total	ug/L	ND (5.0)	ND (5.0)	220	1,100	5.6
Arsenic, Total	ug/L	≼D (ö G)	ME 15 01	150	340	10
Barium, Total	ug/L	31.4	39	4,100	21,000	2,400
Beryllium, Total	ug/L	KD (1.0)	ND (1.0)	NS	NS	NS
Boron, Total	ug/L	라고 (50 0)	- ND (50 0)	1,600	8,100	3,100
Cadmium, Total	ug/L	ND (1,0)	10 th GH	NS	NS	NS
Calcium, Total	ug/L	10,100	10,100	NS	NS	NS
Chromlum, Total	ug/L	의D (5.0)	ND (5.0)	NS	NS	NS
Cobalt, Total	ug/L	ND (5.0)	NO (5.0)	19	95	NS
Copper, Total	ug/L	ND (3.0)	MD (5.0)	NS	NS 1 500 <sup>4</sup>	NS
ron, Total	ug/L	673	1,160	1,500	1,5004	NS <sup>4</sup>
ead, Total	ug/L	1 900	(O) (2.0)	NS NS	NS NS	NS NS
Magnesium, Total	ug/L ug/L	1,800 217	1,880	NS	NS	1,000
Manganese, Total Molybdenum, Total	ug/L ug/L	74D (10.3)	ND (10 0)	NS	NS NS	NS
Vickel, Total	ug/L	ND (10.0)	IND (10 0)	NS	NS	NS
Potassium, Total	ug/L	5.520	5,240	NS	NS	NS
Selenium, Total	ug/L	MD (5.0)	ND (5.0)	NS	NS	NS
Silver, Total	ug/L	NO (1 0)	ND (1.0)	NS	NS	NS
Sodium, Total	ug/L	5,570	5,700	NS	NS	NS
Fhallium, Total	ug/L	MD (18.0)	(0.01) QM	13	65	0.24
/anadium, Total	ug/L	ND (5 0)	NO (5.0)	100	510	NS
Zinc, Total	ug/L	NO (10 0)	NO (19 6)	NS	NS	NS
Mercury, Total	ug/L	ND (0.20)	ND (6.20)	NS	NS	NS
Metals (6010B/7471)		Seminate Public	AND THE STREET	ESVentelinis		MATERIAL STATE
Aluminum, Dissolved	ug/L	NO (50,0)	MD (59 0)	NS	NS	NS
Antimony, Dissolved	ug/L	HD (5 0)	nD (5.5)	NS	NS	NS
Arsenic, Dissolved	ug/L	ND (5 0)	ND (5 0)	NS NS	NS NS	NS
Barium, Dissolved	ug/L	28.7	27.9	NS NS	NS NS	NS NS
Beryllium, Dissolved Boron, Dissolved	ug/L ug/L	MD (1 0) MD (50 0)	MD (50 C)	NS NS	NS NS	NS
Cadmium, Dissolved	ug/L ug/L	MD (1 0)	MD (4 0)	0.25	2.01	NS
Calcium, Dissolved	ug/L ug/L	9,630	9,730	NS NS	NS NS	NS
Chromium, Dissolved	ug/L	ND (5 0)	NO (5 0)	74.1	569.8	NS
Cobalt, Dissolved	ug/L	HD (5.0)	ND (5.0)	NS	NS NS	NS
Copper, Dissolved	ug/L	HD (5 0)	ND (5.0)	9.0	13	NS
ron, Dissolved	ug/L	284	261	NS	NS	300
.ead, Dissolved	ug/L	MD (20)	NO (2.0)	2.5	84.6	NS
Magnesium, Dissolved	ug/L	1,780	1,800	NS	NS	NS
Manganese, Dissolved	ug/L	180	172	NS	NS	NS
Nolybdenum, Dissolved	ug/L	MD (10 01	(8 01) (11	NS	NS	NS
Vickel, Dissolved	ug/L	ND (10 0)	HD (10.0)	52	470	610
Polassium, Dissolved	ug/L	5,340	5,260	NS	NS	NS
Selenium, Dissolved	ug/L	HD (50)	MD (5 C1	4.6	NS	NS
Silver, Dissolved	ug/L	NO (10)	ND (1.0)	NS	3.2	NS
Sodium, Dissolved	ug/L	5,970	5,860	NS	NS	NS
Thallium, Dissolved Vanadlum, Dissolved	ug/L	6.01 CM	4D (10 0)	NS NC	NS NS	NS
ASDSCHOM LINESCHOOL	ug/L	ND (5.0)	110 (5.0)	NS	NS	NS
Zinc, Dissolved	ug/L	MD (10.01	MD (10 G)	120	120	NS

Sample Identification		BROOKS 1H A	Brooks 1H B	Surfac	e Water Quality Cr	iteria¹
Location Sample Date	UNITS	<b>Upgradient</b> 12/8/2009	<b>Downgradient</b> 12/8/2009	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria
VOCs (8260)	ONTO	NAMES AND ADDRESS OF THE PARTY	A STATE OF STREET	No. of the last of	CARLES CONTRACTOR	STREET, STATE OF
1,1,1-Trichloroethane	ug/L	NO (1 0)	ND (1.0)	610	3,000	NS
1,1,2,2-Tetrachloroethane	ug/L	ND (1-0)	AC (1.0)	210	1,000	0.17
1,1,2-Trichloroethane	ug/L	KD (1.0)	ND (4.0)	680	3,400	0.17
1,1-Dichloroethane	ug/L	AD II GI	ND (1 0)	NS	NS	NS
1,1-Dichloroethene	ug/L	NO (4 0)	ND (2.5)	1,500	7,500	33
1,2,4-Trichtorobenzene	ug/L	ND (1.0)	NO (5.0)	26	130	35
1,2.4-Trimethylbenzene	ug/L	NO (1.0)	NO (1.0)	NS NS	NS NS	NS
1,2-Dichlorobenzene	ug/L	ND (1.3)	ND (5 O)	160	820	420
1,2-Dichloroethane		ND (4 0)	NO HO	3,100	15,000	0.38
1,2-Dichloroethene (Total)	ug/L	40 (2.0)	NO (2.5)	3,100 NS	15,000 NS	0.38 NS
	ug/L					
1,2-Dichloropropane	ug/L	ND (1 0)	NO (1.0)	2,200	11,000	NS
1,3,5-Trimethylbenzene	ug/L	ND (10)	ND (1 G)	NS	NS 250	NS
1,3-Dichlorobenzene	ug/L	MD (1.0) MD (1.0)	(6.2) Col	69	350 730	420
	ug/L		NO (1.0)	150		420
2-Butanone (MEK)	ug/L	MD (10.0)	ND (10.0)	32,000	230,000	21,000
2-Hexanone	ug/L	ND (10.9)	ND (10 C)	4,300	21,000	NS
1-Methyl-2-pentanone (MIBK)	ug/L	ND MD C)	MD (10.5)	5,000	26,000	NS
Acetone	ug/L	MD (10.0)	स्व क्षा व	86,000	450,000	3,500
Benzene	ug/L	ND (1.0)	MC (1.0)	130	640	1.2
Bromochloromethane	ug/L	ND (1.0)	MD (4.0)	NS	NS	NS
Bromodichtoromethane	ug/L	NO FI OI	*(0, n, 0)	NS	NS	0.55
Bromoform	ug/L	ND (1 0)	ND (1.0)	370	1,800	4.3
Bromomethane	ug/L	ALC (0.0)	NG (1.0)	110	550	47
Carbon disulfide	ug/L	NO 11 C)	NE (1.0)	NS	NS	NS
Carbon tetrachloride	ug/L	NO (3.0)	(0 r) (H)	560	2,800	0.23
Chlorobenzene	ug/L	NO #1 01	ND (1 0)	240	1,200	130
Chloroethane	ug/L	MD (1 0)	ND 19 DI	NS	NS	NS
Chloroform	ug/L	KD (\$.0)	HD (1:0)	390	1,900	5.7
Chloromethane	ug/L	MD (5 0)	MC (1.C)	5,500	28,000	NS
cis-1,2-Dichloroethene	ug/L	WE (1 (1)	HD (10)	NS	NS	NS
cis-1,3-Dichloropropene	ug/L	40 (° 3)	- HD (1 0) =	61	310	0.34
Dibromochloromethane	ug/L	ND (5.0)	ND IT OF	NS	NS	0.4
Ethylbenzene	ug/L	MD (1 (1)	NO (1.0)	580	2,900	530
sopropylbenzene (Cumene)	ug/L	NO (1-0)	MD (1.5)	NS	NS	NS
n&p-Xylene	ug/L	14D (2.0)	ND (2.0)	210 <sup>5</sup>	1,100	70,000
Methylene Chloride	ug/L	180 (1.0)	40 (1 0)	2,400	12,000	4.6
Methyl-tert-butyl ether	ug/L	40/10	NO (10)	NS	NS	NS
Naphthalene	ug/L	MQ /2 0	NO (2.0)	43	140	NS
n-Butylbenzene	ug/L	NO DO	NO (1.5)	NS	NS	NS
ı-Propylbenzene	ug/L	HD (1.0)	I4D (1 D)	NS	NS	NS
-Xylene	ug/L	IND (1.0)	HE (1.0)	210 <sup>8</sup>	1,100 <sup>5</sup>	70,000 <sup>5</sup>
o-Isopropyltaluene	ug/L	NO (5.0)	ND (3.01	NS	NS	NS
ec-Butylbenzene	ug/L	HD ( O)	ND (1 0)	NS	NS	NS
Styrene	ug/L	NO (1 c)	ND (3 D)	NS	NS	NS
etrachloroethene	ug/L	10110	MD-(5.0)	140	700	0.69
Coluene	ug/L	No mon	HD IN DI	330	1,700	1,300
rans-1,2-Dichloroethene	ug/L	NO (1 0)	ND (5.6)	1,400	6,800	140
rans-1,3-Dichloropropene	ug/L	MD (1 0)	ND (10)	61	310	0.34
Frichloroethene		HD (10)	NO (1.0)	450		
	ug/L				2,300	2.5
Vinyl Chloride  Kylene (Total)	ug/L ug/L	10 (1 0) (1 0) CW	(0.6) DIA	NS 210	NS 1,100	0. <b>025</b> 70,000

Sample Identification		BROOKS 1H A	Brooks 1H B	Surfa	e Water Quality Cr	iteria¹
Location Sample Date Parameter	UNITS	<i>Upgradient</i> 12/8/2009	Downgradient 12/8/2009	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria
SVOCs (8270C)	PROPERTY.		A MARIE PERMANENT	TANGE OF STREET		MANUAL SUBSE
1,2,4-Trichlorobenzene	ug/L	NO 71.11	10.1-CM	26	130	35
1,2-Dichlorobenzene	ug/L	HD (t t)	10, M GM	160	820	420
1,3-Dichlorobenzene	ug/L	ND 11 11	NE (5.0)	69	350	420
1,4-Dichlorobenzene	ug/L	NO 15 51	10.27 CK	150	730	420
1-Methylnaphthalene	ug/L	30 (1.1)	ND (1.0)	NS	NS	NS
2,4,5-Trichlorophenol	ug/L	MD (27)	ND (2.5)	NS	NS	NS
2,4,6-Trichlorophenol	ug/L	ND (5.3)	ND 153	91	460	1.4
2,4-Dichlorophenol	ug/L	MD (5.1)	NO (1.0)	340	1,700	77
2,4-Dimethylphenol	ug/L	ND (1.1)	#D (1.0)	130	660	380
2,4-Dinitrophenol	ug/L	NO (2.7)	HD (2.8)	320	1,600	0.05
2,4-Dinitrotoluene	ug/L	NOW ST	NE (150)	130	660	69
2,6-Dinitrotoluene	ug/L	ND(13)	NET (1.0)	200	990	0.05
2-Chloronaphthalene	ug/L	NO IS 11	ND (1.0)	NS	NS	1,000
2-Chlorophenol	ug/L	HD (5 ft)	NO (5:0)	NS	NS	NS
2-Methylnaphthalene	ug/L	MO IN TO	NO (1.0:	NS	NS	NS
2-Methylphenol(o-Cresol)	ug/L	10 min	NO (1.0)	NS	NS	NS
2-Nitroaniline	ug/L	HC (2 T)	ND (2.8)	NS	NS	NS
2-Nitrophenol	ug/L	100 (1.1)	NO (1.0)	1,600	8,000	NS
3&4-Methylphenol(m&p Cresol)	ug/L	ND (2.2)	MD (20)	NS	NS	NS
3,3'-Dichlorobenzidine	ug/L	MD (1.1)	NDMOI	NS	NS	NS
3-Nitroaniline	ug/L	NO (2.7)	ND (2.8)	NS	NS	NS
1,6-Dinitro-2-methylphenol	ug/L	ND (2.7)	MD (2.8)	16	80	13
1-Bromophenylphenyl ether	ug/L	ND (1-1)	NO (5.0)	54	270	NS
1-Chloro-3-methylphenol	ug/L	NE) (1.1)	MD (5.0)	NS	NS	NS
1-Chloroaniline	ug/L	ND (1.1)	HD (12.0)	NS	NS	NS
-Chlorophenylphenyl ether	ug/L	- MD (1 4)	NO (1.0)	NS	NS	NS
1-Nitroaniline	ug/L	(40 /2.7)	ND (2.5)	NS	NS	NS
1-Nitrophenol	ug/L	NDDT	ND (S D)	470	2,300	NS
Acenaphthene	ug/L	NE (1 1)	ND (1.0)	17	83	670
Acenaphthylene	ug/L	60 to 53	HD IS DV	NS	NS	NS
Anthracene	ug/L	ME (3.7)	NO (1.0)	NS	NS	8,300
Azobenzene	ug/L	NO (1.7)	MD (1.0)	NS	NS	NS
Benzo(a)anthracene	ug/L	NEWS 1	ND (1.0)	0.1	0.5	0.0038
Benzo(a)pyrene	ug/L	NE (4.4)	ND (10)	NS	NS	0.0038
Benzo(b)fluoranthene	ug/L	NO (1 1)	HD (10)	NS	NS	0.0038
Benzo(g,h,i)perylene	ug/L	ND (1.1)	ND (1.0)	NS	NS	NS
Benzo(k)fluoranthene	ug/L	MD (1.1)	ND (1.0)	NS	NS	0.0038
Benzoic acid	ug/L	(ID (10.9)	ND (10.2)	NS	NS	NS
Benzyl alcohol	ug/L	ND (1 1)	MD (5.C)	NS	NS	NS
ois(2-Chloroethoxy)methane	ug/L	ND/11	VD (* 0)	NS	NS	NS
ois(2-Chloroethyl) ether	ug/L	NO CLEA	ND (1.0)	6,000	30,000	0.03
ois(2-Chloroisopropyl) ether	ug/L	HD (1.1)	RD (LC)	NS	NS	1400
bis(2-Ethylhexyl)phthalate	ug/L	MD (1.1)	ND (2.0)	910	4,500	1.2
Butylbenzylphthalate	ug/L	ND (1.1)	NO (1.0)	35	140	150
Carbazole	ug/L ug/L	HC (5.1)	ND (5.0)	NS NS	NS NS	NS NS
Chrysene	ug/L	() t) CN	NO m.o.	NS NS	NS NS	0.0038
Dibenz(a,h)anthracene	ug/L ug/L	No (1 1)	ND (1.0)	NS NS	NS	0.0038
		NO (5.1)	ND (5.0)	NS	NS	
Dibenzofuran Dieferlehen Berthalete	ug/L					NS 47,000
Diethylphthalate	ug/L	NO 15 51	ND (1,0)	800 NS	4,000	17,000
Dimethylphthalate	ug/L	ND (1 1)	ND (1.0)	NS	NS	NS
Di-n-butylphthalate	ug/L	ND (1 1)	NO (1.0)	21	110	2,000
Di-n-octylphthalate	ug/L	MD (1 1)	(0.1) GM	NS	NS	NS
luoranthene	ug/L	ND (1 1)	HO IN ON	40	200	130
luorene	ug/L	NO 11 11	NO mon	NS	NS	1,100

Dimock Township, Susquehanna County, PA

Sample Identification		BROOKS 1H A	Brooks 1H B	Surfa	e Water Quality Cr	iteria <sup>1</sup>
Location Sample Date	Upgradient 12/8/2009 UNITS		Downgradient 12/8/2009	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria
SVQCs (8270C)	2019. <b>6.40</b> 2	Colored which the	CHIANGE TABLE	The torrect of	ACCUPATION OF THE PARTY OF THE	MATERIAL PROPERTY.
Hexachloro-1,3-butadiene	ug/L	ND (1.1)	MD (1.0)	2	10	0.44
Hexachlorobenzene	ug/L	ND (11)	(0, h) GN	NS	NS	0.00028
Hexachiorocyclopentadiene	ug/L	MO(15)	(C, I) C/4	1	5	40
Hexachloroethane	ug/L	NO IS IS	MD (1.0)	12	60	1,4
Indeno(1,2,3-cd)pyrene	ug/L	1/(0 / (1)	1-0 (1.0)	NS	NS	0.0038
Isophorone	ug/L	WO IT 1)	וס דו סא	2,100	10,000	35
Naphthalene	ug/L	ND (\$ 1)	- HD (130)	43	140	NS
Nitrobenzene	ug/L	HD (1.1)	4D (5 0)	810	4,000	17
N-Nitrosodimethylamine	ug/L	ND (1 1)	ND (1.0)	3,400	17,000	0.00069
N-Nitroso-di-n-propylamine	ug/L	(F 1) QU	(Q.F) (DS	NS	NS	0.005
N-Nitrosodiphenylamine	ug/L	(f. f) GN	MD (1.0)	59	3,000	3.3
Pentachlorophenol	ug/L	ND (2.7)	ND (2.8)	0.00589	0.00768	0.27
Phenanthrene	ug/L	MD PEN	ND (1.0)	1	5	NS
Phenol	ug/L	AD U A)	HD (1.0)	NS	NS	21,000
Pyrene	ug/L	ND K(1)	MD (1 0)	NS	NS	830

#### Notes:

<sup>5</sup>= As total xvlenes. <sup>5</sup>= As total xylenes.

= Results exceed SHS R-U MSC and/or applicable surface water quality criteria. 5.8

<sup>&</sup>lt;sup>1</sup>= Values from 25 Pa Code Chapter 93.8, Table 5; values assume a pH of 6.5 SU and hardness of 100 mg/L, where applicable. Values provided for chromium are for chromium III. Values for chloride, TDS, pH, manganese and Iron from 25 Pa Code Chapter 93.7, Table 3.

<sup>&</sup>lt;sup>2</sup>= ND (1.0) = Parameter not detected at the detection limit specified in parentheses.

<sup>3=</sup> No Standard.

<sup>4=</sup> The specific water quality criteria for total recoverable iron is for aquatic life uses and is expressed as a 30-day average concentration. The water quality criteria for human health is expressed as dissolved iron. See 25 PA Code Section 93.7.

# Table 4.3-1 Analytical Results for Soil W. Chudleigh 1 Wellsite

Sample Identification Sample Date		<b>CHUDLEIGH-1-B1</b> 5/25/2010	CHUDLEIGH-1-B2 5/25/2010	SOIL Residential Used Aquifer MSCs <sup>1</sup>
Parameter	Units			PERSONAL PROPERTY AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON ADDRESS OF THE PERSON AND ADDRESS OF THE PERSON AND ADDRESS
General Chemistry Analyses	0,	TOTAL PROPERTY OF		NS <sup>3</sup>
Percent Moisture (ASTM D2974-87)	%	9.9	9.0	
Nitrogen, Ammonia (EPA 350.1)	mg/kg	ND (5.3)2	MD (5.3)	1,900
Chloride (SM 4500-CI-E)	mg/L	NB (3.0)	WD (3.0)	NS NS
Surfactants (MBAS SM 5540C)	mg/L	NO (0.10)	MG (0.10)	1400
Ethylene Glycol (EPA 8015)	mg/kg	NO (10.0)	NO (10.0)	1400
Metals Analyses (6010B/7471) Aluminum	malka	11,000	13,100	190,000
	mg/kg	MD (0.52)	MD 10 491	27
Antimony Arsenic	mg/kg mg/kg	10.2	3.5	12
Barium		136	84.1	8,200
Beryllium	mg/kg mg/kg	0.65	0.81	320
Boron	mg/kg mg/kg	5.7	8.6	1,900
Cadmium	mg/kg	ND (0.21)	0.23	38
Calcium	mg/kg	1,350	1,010	NS NS
Chromium	mg/kg	11.8	16.9	190,000
Cobalt	mg/kg	9.6	11.4	50
Copper	mg/kg	13,2	6.4	8,100
Iron	mg/kg	22,800	31,700	150,000
Lead	mg/kg	9.2	4,9	450
Magnesium	mg/kg	3,420	4,610	NS
Manganese	mg/kg	519	410	2,000
Molybdenum	mg/kg	ND (2,1)	ND (2.0)	650
Nickel	mg/kg	17.8	26.7	650
Potassium	mg/kg	1,790	2,050	NS NS
Selenium	mg/kg	ND (0.62)	ND (0.48)	26
Silver	mg/kg	0.52	0.93	84
Sodium	mg/kg	ND (524)	ND (ASI)	NS
Thallium	mg/kg	ND (2.1)	VD (2.0)	14
Vanadium	mg/kg	12.2	16.8	1,500
Zinc	mg/kg	50.2	52,5	12,000
Mercury	mg/kg	MD (0.10)	ND (6.16)	10
VOC Analyses (8260)	EDITOR BUTTO	No of the land with the	SECTION AND ADDRESS.	THE RESIDENCE AND THE
1.1.1-Trichloroethane	mg/kg	ND (0.0052)	(4D (0.0057)	20
1,1,2,2-Tetrachloroethane	mg/kg	HD (0.0052)	HE (0.0057)	0.08
1.1,2-Trichloroethane	mg/kg	ND (0.0052)	ND (0.0057)	0.5
1,1-Dichloroethane	mg/kg	MD /9,0082)	74D (0.0057)	3.1
1,1-Dichloroethene	mg/kg	MD (0.0052)	MD (0.0057)	0.7
1,2,4-Trimethylbenzene	mg/kg	ND (0.0052)	ND (0.0057)	8.4
1,2-Dichlorobenzene	mg/kg	NO (0.0052)	MD (0.0087)	60
1,2-Dichloroethane	mg/kg	NO (0.0052)	ND (0.0357)	0.5
1,2-Dichloroethene (Total)	mg/kg	(3010.0) QM	(0.0114)	75
1,2-Dichloropropane	mg/kg	ND (0.0052)	(vt) (0.0057)	0.5
1,3,5-Trimethylbenzene	mg/kg	MD (0.0082)	MD (0.0057)	2.3
1,3-Dichlorobenzene	mg/kg	ND (0.0052)	MD (0.0057)	61
1,4-Dichlorobenzene	mg/kg	NE (0.0052)	MD (0.0057)	10
2-Butanone (MEK)	mg/kg	MD (0,0105)	MD (0.0114)	400
2-Hexanone	mg/kg	ND (0.0105)	ND (0.0114)	1.1
4-Methyl-2-pentanone (MIBK)	mg/kg	ND (0.0105)	NO (0 0114)	290

# Table 4.3-1 Analytical Results for Soil W. Chudleigh 1 Wellsite

Sample Identification		CHUDLEIGH-1-B1	CHUDLEIGH-1-B2	SOIL Residential Used Aquifer MSCs <sup>1</sup>
Sample Date Parameter	Units	5/25/2010	5/25/2010	Wiscs
VOC Analyses (8260)	Ormo	A SHEET HAT CAN THE D	STATUTE OF SCHOOLSE	STATE OF THE PARTY
Acetone	mg/kg	ND (0.0105)	NO (0,0516)	3,300
Benzene	mg/kg	NO (0.0052)	ND (0.0057)	0.5
Bromodichloromethane	mg/kg	VD (0.0052)	ND (0.0057)	8
Bromoform		ND (0.0052)	ND (0.0057)	8
Common Acid Charles Common Com	mg/kg	ND 15.00521		1
Bromomethane	mg/kg		(VD (0.0057)	
Carbon disulfide	mg/kg	ND (0.0052)	MD (0.0057)	150
Carbon tetrachloride	mg/kg	MD (0,0052)	MD (0.0057)	0.5
Chlorobenzene	mg/kg	MD (0.0052)	ND (0.0057)	10
Chloroethane	mg/kg	ND (0.0052)	ME (0.0057)	23
Chloroform	mg/kg	ND (0.0052)	MD (0,0057)	8
Chloromethane	mg/kg	ND (0.0052)	ND (0.0057)	3
cis-1,2-Dichloroethene	mg/kg	ND (0,0052)	ND 16.00571	7
cis-1,3-Dichloropropene	mg/kg	ND (0,9052)	MD (0,0057)	0.66
Dibromochloromethane	mg/kg	MD (0.0052)	WD (0.9657)	8
Ethylbenzene	mg/kg	ND (0.0052)	SE (0.0057)	70
sopropylbenzene (Cumene)	mg/kg	ND (0.0652)	MC (0.0057)	600
n&p-Xylene	mg/kg	ND (0.0105)	ND (0.0174)	1,000°
Methylene Chloride	mg/kg	ND (0,0052)	MD (0.0057)	0.5
Methyl-tert-butyl ether	mg/kg	NE (0.0082)	MD (0.0087)	2
Naphthalene	mg/kg	ND (0.0052)	MC (0.0057)	25
n-Butylbenzene	mg/kg	ND (0.0052)	MD (0.0057)	950
n-Propylbenzene	mg/kg	ND (0.0052)	ID (0.0057)	290
o-Xylene	mg/kg	ND (0.0052)	MD (0.0057)	1,000
o-Isopropyltoluene		ND (0.0052)	MD (0.0687)	NS NS
	mg/kg	MD (0.0052)	NO (0.0057)	350
sec-Butylbenzene	mg/kg			
Styrene	mg/kg	ND (0.0052)	ND (0.0057)	24
Tetrachloroethene	mg/kg	MCI (0.0052)	NO (0.0057)	0.5
Toluene	mg/kg	ND (0.0052)	NO (0.0067)	100
TOTAL BTEX	mg/kg	NO (0.0314)	ND 19.0361)	NS
rans-1,2-Dichloroethene	mg/kg	ND (0.0082)	MD (0.0057)	10
rans-1,3-Dichloropropene	mg/kg	ND (0.0052)	MD (0.0057)	0.66
Trichloroethene	mg/kg	ND (0.0052)	ND (0.0057)	0.5
Vinyl chloride	mg/kg	(€D (0.0052)	ND (0.0057)	0.2
(Viene (Total)	mg/kg	ND (0.0157)	NO (0.0170)	1,000
SVOC Analyses (8270)		VAN DE STATE	AND THE RESERVE ASSESSMENT	THE RESIDENCE OF THE PARTY OF T
1,2,4-Trichlorobenzene	mg/kg	ND (0.368)	(4D-70,385)	27
1.2-Dichlorobenzene	mg/kg	ND (0.368)	MD (0.363)	60
1,3-Dichlorobenzene	mg/kg	ND (0.368)	ND (0.363;	61
1,4-Dichlorobenzene	mg/kg	ND (0.368)	MD (0.883)	10
2.4.5-Trichlorophenol	mg/kg	MD (0.918)	ND (0.307)	2,300
2.4,6-Trichlorophenol	mg/kg	ND (0.368)	ND (0.363)	11
2,4-Dichlorophenol	mg/kg	11D (0.368)	ND (0.363)	2
2,4-Dimethylphenol	mg/kg	ND (0.388)	MD (0.383) MD (0.907)	73
2,4-Dinitrophenol	mg/kg	(0.819)		
2,4-Dinitrotoluene	mg/kg	MD (0.368)	(ND (0.363)	0.21
2,6-Dinitrotoluene	mg/kg	ND (0.368)	NE) (C.365)	3.7
2-Chloronaphthalene	mg/kg	(0.368)	MD (0.363)	6,200
2-Chlorophenol	mg/kg	ND (0.368)	MD (0.363)	4.4
2-Methylnaphthalene	mg/kg	ND (0.368)	ND (0.363)	600
2-Methylphenol(o-Cresol)	mg/kg	ND (0,368)	- NO (0.389)	180
2-Nitroaniline	mg/kg	ND (0.819)	NO (0.907)	11
2-Nitrophenol	mg/kg	원이 (0.368)	ND (0.363)	29

#### Table 4.3-1 Analytical Results for Soil W. Chudleigh 1 Wellsite

Dimock, Township Susquehana County, PA

Sample Identification		CHUDLEIGH-1-B1	CHUDLEIGH-1-B2	SOIL Residential Used Aquifer MSCs <sup>1</sup>
Sample Date	9	5/25/2010	5/25/2010	I III OOS
Parameter	Units			
SVOC Analyses (8270)		Manager Committee	Authority September 1	<b>是这个时间</b> 是是一个
3&4-Methylphenol(m&p Cresol)	mg/kg	ND (0.735)	NE 10 7251	18'
3,3'-Dichlorobenzidine	mg/kg	MD (0.386)	NO (0.383)	8.3
3-Nitroaniline	mg/kg	ND (0.919)	ND (0.9071	1.1
4,6-Dinitro-2-methylphenol	mg/kg	ND (0.919)	MD (0.907)	0.37
4-Bromophenylphenyl ether	mg/kg	ND (0,366)	HD (6.363)	NS
4-Chloro-3-methylphenol	mg/kg	ND (0.368)	MD (9.353)	37
4-Chloroaniline	mg/kg	ND (0.368)	ND (0.353)	0.42
4-Chlorophenylphenyl ether	mg/kg	MD (0.388)	ND (0.368)	NS
4-Nitroaniline	mg/kg	ND (0.819)	ND (0.907)	3.3
4-Nitrophenol	mg/kg	ND (0.368)	ND (0.383)	6
Acenaphthene	mg/kg	MD (0.388)	MD (0.363)	2,700
Acenaphthylene	mg/kg	MD (0.366)	ND (0.363)	2,500
Anthracene	mg/kg	ND (0.388)	ND (9.363)	350
Benzo(a)anthracene	mg/kg	ND (0.388)	FD (0.382)	5.7
Benzo(a)pyrene	mg/kg	ND (0.368)	ND (0.363)	0.57
Benzo(b)fluoranthene	mg/kg	ND (0.366)	ME (0.363)	5.7
Benzo(g,h,i)perylene	mg/kg	ND (0.368)	NE (0.383)	180
Benzo(k)fluoranthene	mg/kg	MD (0,368)	ND (0.383)	57
Benzyl alcohol	mg/kg	NO (0.368)	MD (0.365)	1,800
bis(2-Chloroethoxy)methane	mg/kg	ND (0.338)	N:D (0.385)	11
bis(2-Chloroethyl) ether	mg/kg	ND (0.388)	MD (0.363)	0.015
bis(2-Chloroisopropyl) ether	mg/kg	HD (0.388)	MD (6,333)	30
bis(2-Ethylhexyl)phthalate	mg/kg	MD (0.368)	MENO 3881	130
Butylbenzylphthalate	mg/kg	1886,0) CM	ND (0,353)	3,000
Chrysene	mg/kg	NEY (0,368)	MD (0.363)	230
Dibenz(a,h)anthracene	mg/kg	HD (0.368)	ND (0.363)	0.57
Dibenzofuran	mg/kg	ND (0.368)	ME (0.363)	95
Diethylphthalate	mg/kg	ND (0.368)	MD: (0.363)	2900
Dimethylphthalate	mg/kg	ND (0.388)	ND (0.363)	NS
Di-n-butylphthalate	mg/kg	MD (0.358)	MD (0.363)	1500
Di-n-octylphthalate	mg/kg	(NE (0.368)	MD (0.383)	8,800
Fluoranthene	mg/kg	PMD (0.388)	MD (0.383)	3,200
Fluorene	mg/kg	ND 10.3681	ND (0.363)	3,000
Hexachloro-1,3-butadiene	mg/kg	ND (0.368)	ND (0.363)	10
Hexachlorobenzene	mg/kg	년요 (0,368)	NE (0.363)	0.96
Hexachlorocyclopentadiene	mg/kg	MD (0.368)	ND (0.363)	91
Hexachloroethane	mg/kg	ND (0,388)	ND (0.383)	0.56
Indeno(1,2,3-cd)pyrene	mg/kg	MD (0.368)	ND (0.383)	5.7
Isophorone	mg/kg	ND (0.368)	MD (0.363)	10
Naphthalene	mg/kg	MD (0.368)	HD (6.383)	25
Nitrobenzene	mg/kg	MD (0.368)	1/D (0.360)	7,3
N-Nitroso-di-n-propylamine	mg/kg	MD (0.388)	HD (0.363)	0.0094
N-Nitrosodiphenylamine	mg/kg	ND (0.368)	MD (0.363)	20
Pentachlorophenol	mg/kg	MD (0.919)	ND (0.907)	5
Phenanthrene	mg/kg	ME (0,388)	ND (0.363)	10,000
Phenol	mg/kg	(0.388)	ND (0.383)	200
Pyrene	mg/kg	ND (0.368)	ND (0.353)	2,200

#### Notes:

12.5 =Result exceeds SHS Residential, Used Aquifer MSC

Medium-Specific Concentrations (MSCs) were established from the Residential, Used Aquifer with TDS < 2500 MSCs Soil to Groundwater Numeric Values listed in Appendix A, Table 3 and Table 4 of 25 PA Code Section 250, Administration of the Land Recycling Act (Act 2) regulations.</p>

<sup>&</sup>lt;sup>2</sup>= ND (5.3) = Parameter not detected at the detection limit specified in parentheses.

<sup>3=</sup>No Standard

<sup>4=</sup>as Chromium III.

<sup>5=</sup>as cis-1, 2 - Dichloroethlene

<sup>&</sup>lt;sup>6</sup>=as Total xylenes.

<sup>&</sup>lt;sup>7</sup>=as p-Cresol

Sample Identification		Chud-DN	Chud-UP	Surfa	ace Water Quality Crite	Criteria <sup>1</sup>	
Sample Location		Downgradlent	Upgradient				
Sample Date		5/26/2010	5/26/2010	Fish and Aquatic Life Criteria -	Fish and Aquatic Life Criteria - Acute	Human Health Criteria	
Parameter	UNITS	L		Chronic	Life Cifteria - Acute	Cinteria	
General Chemistry	UNITS	resident to the second		ST. FLYSLES HAVE BEEN		and the Holland	
pH	pH units	7.6	7.6		9.0	NS <sup>3</sup>	
Diesel Components (DRO EPA 8015B Mod)	mg/L	HD (0.11)	MD (0 11)	NS <sup>3</sup>	NS	NS	
TPH (C06-C10) (GRO EPA 8015B Mod)	mg/L	(4D (0 200)	ND (0.200)	NS	NS	NS	
Oil and Grease (EPA 1664A)	mg/L	MD (4.9)	MD /5 (1)	NS	NS	NS	
TPH (EPA 1664A) Acidity (SM 2310B)	mg/L mg/L	NE (5.8)	NO (4.8) NO (10.0)	NS NS	NS NS	NS NS	
Alkalinity (SM 2320B)	mg/L	36.0	42.0	NS	NS NS	NS	
Ammonia (EPA 350.1)	mg/L	ND (0.10)	MD (0.10)	NS	NS	NS	
Ethylene Glycol (EPA 8015)	mg/L	ND (10,0)	MD-(40 D)	NS	NS	NS	
TDS (SM 2540C)	mg/L	106	89.0	NS	NS	750	
Surfactants (MBAS SM 5540C)	mg/L	ND (0 10)	ND (0.50)	NS	NS	NS	
Chloride (SM 4500-CI-E) Total Metals Analyses (6010/7470)	mg/L	4.8	4.6	NS	NS	250	
Aluminum, Total	ug/L	1480	291	NS NS	750	NS	
Antimony, Total	ug/L	ND (5 G) <sup>2</sup>	PID (5.0)	220	1,100	5.6	
Arsenic, Total	ug/L	(0.5) (BA	MD (5.0)	150	340	10	
Barium, Total	ug/L	50.6	34.8	4,100	21,000	2,400	
Beryllium, Total	ug/L	MD (4 0)	(1 0)	NS	NS	NS	
Boron, Total	ug/L	ND (50 0)	HD (50 0)	1,600	8,100	3,100	
Cadmium, Total Calcium, Total	ug/L ug/L	16,900	16,900	NS NS	NS NS	NS NS	
Chromium, Total	ug/L	ND (5.0)	ND (5.0)	NS	NS NS	NS	
Cobalt, Total	ug/L	HD (5.0°	ND (5.0)	19	95	NS	
Copper, Total	ug/L	NO (5 0)	18D (50)	NS	NS	NS	
Iron, Total	ug/L	2,080	481	1,500 <sup>4</sup>	1,500°	NS⁴	
Lead, Total	ug/L	HD (2.0)	MD (2.0)	NS	NS	NS	
Magnesium, Total	ug/L	2,420	2,160	NS	NS	NS	
Manganese, Total Molybdenum, Total	ug/L ug/L	184 (10 (20 0)	49.8	NS NS	NS NS	1,000 NS	
Nickel, Total	ug/L ug/L	NO (10.0)	MD (10.0)	NS	NS NS	NS	
Potassium, Total	ug/L	973	623	NS	NS	NS	
Selenium, Total	ug/L	NO (50)	MD (5.0)	NS	NS	NS	
Silver, Total	ug/L	1.2	MD (1.0)	NS	NS	NS	
Sodium, Total	ug/L	2,390	2,530	NS	NS	NS	
Thallium, Total Vanadium, Total	ug/L	18D (10.0) (0.5) QM	MD (10.0)	13	65 510	0.24 NS	
Zinc, Total	ug/L ug/L	NO CIC.DI	ND (90 0)	NS NS	NS NS	NS	
Mercury, Total	ug/L	ND (C 20)	NO 70 201	NS	NS	NS	
Dissolved Metals Analyses (6010/7470)		LANCE OF STREET	EN TO THE LAND	DANIEL CONTRACTOR	ALL STREET	Phylos	
Aluminum, Dissolved	ug/L	ND (50 01	(VC (50 B)	NS	NS	NS	
Antimony, Dissolved	ug/L	ND (6.0)	MD (5.0)	NS	NS	NS	
Arsenic, Dissolved Barium, Dissolved	ug/L ug/L	NO :3 01 30,2	(D (5 0) 29.7	NS NS	NS NS	NS NS	
Beryllium, Dissolved	ug/L ug/L	10 (1.0)	ND (1.0)	NS NS	NS NS	NS NS	
Boron, Dissolved	ug/L	ND (60.0)	ND (50 0)	NS	NS	NS	
Cadmium, Dissolved	ug/L	ND (9°0)	ND (1,0)	0.25	2.01	NS	
Calcium, Dissolved	ug/L	16,100	16,500	NS	NS	NS	
Chromium, Dissolved	ug/L	MD (5.01	MO 15 01	74.1	569.8	NS NS	
Cobalt, Dissolved Copper, Dissolved	ug/L ug/L	MD (8 0)	MD (8 0)	NS 9.0	NS 13	NS NS	
Iron, Dissolved	ug/L ug/L	54.8	60.4	NS NS	NS NS	300	
Lead, Dissolved	ug/L	ND (0.0)	NO (20)	2.5	64.6	NS	
Magnesium, Dissolved	ug/L	1,940	1,980	NS	NS	NS	
Manganese, Dissolved	ug/L	7.7	6.2	NS	NS	NS	
Molybdenum, Dissolved	ug/L	ND (20 0)	MD (20.0)	NS	NS 470	NS	
Nickel, Dissolved Potassium, Dissolved	ug/L ug/L	628	HD (10.0) 563	52 NS	470 NS	610 NS	
Selenium, Dissolved	ug/L ug/L	ND (5 0)	NO (5.0)	4.6	NS NS	NS	
Silver, Dissolved	ug/L	ND (1.0)	A-D -1 01	NS NS	3.2	NS	
Sodium, Dissolved	ug/L	2,890	2,760	NS	NS	NS	
Thallium, Dissolved	ug/L	MD (40.3)	NO (10 0)	NS	NS	NS	
Vanadium, Dissolved	ug/L	NE (5 0)	ND (5.5)	NS	NS	NS	
Zinc, Dissolved	ug/L	ND (10.0)	9D (10 d)	120	120	NS	
Mercury, Dissolved	ug/L	MD (0.30)	HO (0.50)	0.77	1.4	0.05	

Sample Identification		Chud-DN	Chud-UP	Surf	ce Water Quality Criteria		
Sample Location Sample Date		Downgradient 5/26/2010	<i>Upgradient</i> 5/26/2010	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria	
Parameter	UNITS						
VOCs (8260)	\$1.543 A		William William	Extra Section 1			
Acetone	ug/L	MO MO OI	ND (10 3)	86,000	450,000	3,500	
Benzene	ug/L	NO (1.0)	(C) (C) (S)	130	640	1.2	
Bromochloromethane	ug/L	ND FED	ND (10)	NS	NS	NS	
Bromodichloromethane	ug/L	10/10	地位在第	NS	NS	0.55	
Bromoform	ug/L	NO (5 0)	HD M(D)	370	1800	4.3	
Bromomethane	ug/L	40 mm	ND FT 01	110	550	47	
2-Butanone (MEK)	ug/L	MD (10.0)	HD (10 0)	32,000	230,000	21,000	
n-Butylbenzene	ug/L	MOTTO 01	KD (1 0)	NS	NS	NS	
sec-Butylbenzene	ug/L	ND (16)	4D (1 0)	NS	NS	NS	
Carbon disulfide	ug/L	(C () ()	NE (1,0)	NS	NS	NS	
Carbon tetrachloride	ug/L	ND U.D.	ND N DI	560	2,800	0.23	
Chlorobenzene	ug/L	NO (10)	NO (1.0)	240	1,200	130	
Chloroethane	ug/L	MD (S D)	MD (1.0)	NS 390	NS 4 000	NS	
Chloroform	ug/L	ND in all	NO (1 0)		1,900	5.7	
Chloromethane	ug/L	MDV1.01	h(0 (1,0)	5,500	28,000	NS	
Oibromochloromethane	ug/L	ND (5.0)	NO (1.0)	NS	NS	0.4	
,2-Dibromoethane (EDB)	ug/L	HD (1.0)	ND (1.0)	NS	NS	NS	
,2-Dichlorobenzene	ug/L	(0.1) CM	MD (1 0)	160	820	420	
,3-Dichlorobenzene	ug/L	ND (10)	ND (1 0)	69	350 730	420 420	
,4-Dichlorobenzene	ug/L	MD (1 0)	ND (1.0)	150 NS	NS -	100	
.1-Dichloroethane	ug/L			9-7, 0-6	15,000	NS	
,2-Dichloroethane	ug/L	(MD (5.0)	ND (1 D)	3,100 NS	NS	0.38 NS	
,2-Dichloroethene (Total)	ug/L	HD 12 01	MD (2,0)	1,500	7,500	33	
cis-1,2-Dichloroethene	ug/L	ND (1.0)	ND (1.0)	1,500 NS	NS	NS	
rans-1,2-Dichloroethene	ug/L ug/L	ND (1.0)	ND (1.0)	1.400	6,800	140	
1,2-Dichloropropane	ug/L ug/L	NO (1 0)	ND (1.0)	2,200	11,000	NS	
cis-1,3-Dichloropropene	ug/L ug/L	NO (2.0)	NE M.O.	61	310	0.34	
rans-1,3-Dichloropropene	ug/L	NO 41 01	MD r1 a)	61	310	0.34	
Ethylbenzene	ug/L	NO (10)	ND (1 0)	580	2,900	530	
2-Hexanone	ug/L	10 mp or	ND (10.0)	4,300	21,000	NS	
sopropylbenzene (Cumene)	ug/L	WD M.O.	ND (10)	NS	NS NS	NS	
a-Isopropylloluene	ug/L	ND (1.0)	NO (1.0)	NS	NS	NS	
Methylene Chloride	ug/L	ND (1.0	NE) (1 0)	2,400	12,000	4.6	
1-Methyl-2-pentanone (MIBK)	ug/L	ND (10.01	10:00	5.000	26,000	NS	
Methyl-tert-butyl ether	ug/L	PID #1.01	ME (1 0)	NS	NS	NS	
Naphthalene	ug/L	(ED (2.0)	ND (2.0)	43	140	NS	
-Xylene	ug/L	ND /1 01	ND (1.6)	2106	1,1008	70,000 <sup>5</sup>	
-Propylbenzene	ug/L	ND (10)	HD (+ 0)	NS	NS	NS	
Styrene	ug/L	ND // (N	NC (1.0)	NS NS	NS	NS	
1,1,2,2-Tetrachloroethane	ug/L	ND (1.0)	NO (1.0)	210	1,000	0.17	
etrachioroethene	ug/L	HD (1.0)	DIE (1 0)	140	700	0.69	
oluene	ug/L	ND (1 C)	NC (10)	330	1,700	1,300	
,2,4-Trichlorobenzene	ug/L	(ID (1 C)	NO (S.E.)	28	130	35	
.1.1-Trichloroethane	ug/L	14D (1.0)	(C (1 O)	610	3,000	NS	
.1.2-Trichloroethane	ug/L	MD (1.0)	ND (1.0)	680	3,400	0.59	
richloroethene	ug/L	ND (Y D)	ND (1.0)	450	2,300	2.5	
,2,4-Trimethylbenzene	ug/L	ND (1.0)	NE (1.0)	NS	NS NS	NS	
,3,5-Trimethylbenzene	ug/L	HD (1 G)	ND (1 0)	NS	NS	NS	
/invl Chloride	ug/L	MD (1 d)	ND (1.0)	NS NS	NS	0.025	
Kylene (Total)	ug/L	KD (3.0)	10.63.01	210	1,100	70,000	
n&p-Xylene	ug/L	ND (2.01	ND (2.0)	2105	1,100 <sup>6</sup>	70,000 <sup>5</sup>	

Sample Identification		Chud-DN	Chud-UP	Surfa	ace Water Quality Crite	eria <sup>1</sup>
Sample Location Sample Date		Downgradient 5/26/2010	<b>Upgradient</b> 5/26/2010	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria
Parameter	UNITS			CHARLES HE CAN DESCRIPTION	Land of the land	
SVOCs (8270C)	HUARSKA		The street of			
2-Methylphenol(a-Cresol)	ug/L	MD (9.2)	MS (N.D)	NS	NS	NS
3&4-Methylphenol(m&p Cresol)	ug/L	300性点	NO 12 1	NS	NS	NS
Acenaphthene	ug/L	40(1).21	HO (1.0)	17	83	670
Acenaphthylene	ug/L	NO I' EI	ND (1.0)	NS	NS	NS
Anthracene	ug/L	NO (* Z	- ME (1.0)	NS	NS	8300
Azobenzene	ug/L	NO 0 21	NO (5.0)	NS	NS	NS
Benzo(a)anthracene	ug/L			0.1 NS	0.5	0.0038
Benzo(a)pyrene	ug/L	NO (1 2)	NO IT (II)	NS NS	NS NS	0.0038
Benzo(b)fluoranthene Benzo(g,h,l)perylene	ug/L ug/L	ND (* 2)	NE (1.0)	NS NS	NS NS	0.0038
		60 (5 2)	NO (5 0)			NS 0.0030
Benzo(k)fluoranthene Benzoic acid	ug/L ug/L	ND (319)	ND (198)	NS NS	NS NS	0.0038 NS
Benzyl alcohol	ug/L ug/L	NO (5.2)	MD (100)	NS NS	NS NS	NS NS
4-Bromophenylphenyl ether	ug/L	ND (1.2)	MD (1 3)	54	270	NS NS
Butylbenzylphthalate	ug/L	NO /1 21	ND (5.0)	35	140	150
Carbazole	ug/L	NO (1 2)	NO (1 0)	NS	NS NS	NS
4-Chloro-3-methylphenol	ug/L	ND (1.2)	ND (1.0)	NS	NS NS	NS NS
1-Chloroaniline	ug/L	ND (1.2)	ND (1.0)	NS	NS NS	NS NS
ois(2-Chloroethoxy)methane	ug/L	ND (1.2)	MD (T.D)	NS	NS NS	NS
ois(2-Chloroethyl) ether	ug/L	NET 21	(vD (1.0)	6,000	30,000	0.03
pis(2-Chloroisopropyl) ether	ug/L	9(D (1 2)	ND (1.0)	NS	NS NS	1,400
2-Chloronaphthalene	ug/L	NO/1.21	NO (1.0)	NS	NS NS	1,000
2-Chlorophenol	ug/L	MO (4.5)	NC (1.0)	NS	NS	NS
4-Chlorophenylphenyl ether	ug/L	ND (5.2)	MC (11.9)	NS	NS	NS
Chrysene	ug/L	NO (= 2)	AIC (1.0)	NS	NS	0.0038
Dibenz(a,h)anthracene	ug/L	*DAZ	HD (12)	NS	NS	0.0038
Dibenzofuran	ug/L	ND (1.2)	MD (1 D)	NS	NS	NS
1,2-Dichlorobenzene	ug/L	NE (T.E)	(E) (7.0)	160	820	420
,3-Dichlorobenzene	ug/L	ND 7 21	NO 11.01	69	350	420
1,4-Dichlorobenzene	ug/L	el070-21	(AD 15.0)	150	730	420
3,3'-Dichlorobenzidine	ug/L	ND (5.2)	NO (5,0)	NS	NS	NS
2,4-Dichlorophenol	ug/L	NE (1.2)	ME IT CT	340	1,700	77
Diethylphthalate	ug/L	W04921	MD (1.0)	800	4,000	17,000
2,4-Dimethylphenol	ug/L	NC 15 21	ND (1 0)	130	660	380
Dimethylphthalate	ug/L	10 (1.2)	(C ( C)	NS	NS	NS
Di-n-butylphthalate	ug/L	ND (1.2)	NO (10)	21	110	2.000
1,6-Dinitra-2-methylphenol	ug/L	MD IS DI	NE (2.8)	16	80	13
2,4-Dinitrophenol	ug/L	NO (8.0)	ND (2.5)	320	1,600	0.05
2,4-Dinitrotoluene	ug/L	6(D (1.2)	MD (1.5)	130	660	69
2,6-Dinitrotoluene	ug/L	HO (5/3)	1/0 (1,0)	200	990	0.05
Di-n-octylphthalate	ug/L	MD (5.2)	PID IN DI	NS	NS	NS
ois(2-Ethylhexyl)phthalate	ug/L	ND (6.2)	MD (5.0)	910	4,500	1.2
luoranthene	ug/L	ND /1 21	100 (1.0)	40	200	130
luorene	ug/L	ND (1.2)	FD (10)	NS	NS	1,100
lexachloro-1,3-butadiene	ug/L	MD 19 21	10 (10)	2	10	0.44
lexachlorobenzene	ug/L	HD (1.2)	(0.1) 291	NS	NS	0.00028
lexachlorocyclopentadiene	ug/L	(中2)	ND (10)	1	5	40
lexachloroethane	ug/L	70 (1 2)	(i 0)	12	60	1.4
ndeno(1,2,3-cd)pyrene	ug/L	(C) (C)	80 (1.0)	NS	NS	0.0038
sophorone	ug/L	ND (1 2)	MD (1.0)	2.100	10,000	35
-Methylnaphthalene	ug/L	HD 11 83	NO (1.5)	NS	NS	NS
2-Methylnaphthalene	ug/L	NO (1.2)	ND (1.0)	NS	NS	NS
Vaphthalene	ug/L	IED (5.2)	NE (1.0)	43	140	NS
2-Nitroaniline	ug/L	ND (9.0)	HD (2.8)	NS	NS	NS

#### Dimock Township Susquehanna County, PA

Sample Identification		Chud-DN	Chud-UP Upgradient 5/26/2010	Surface Water Quality Criteria <sup>1</sup>			
Sample Location Sample Date	UNITS	Downgradlent 5/26/2010		Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Hoalth Criteria	
Parameter SVOCs 8270C)	ONTO	HE SAN THE RESERVE OF THE PARTY	No are a local box and	invited to the second of the last	IN THE RESIDENCE AND ADDRESS OF THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TWO IS NAMED IN CO		
3-Nitroaniline	ug/L	MD (3.01	ND (2.6)	NS.	l NS I	NS	
4-Nitroaniline	ug/L	10 E) GK	MD (2.6)	NS	NS	NS	
Nitrobenzene	ug/L	ND (1.2)	NO CO	810	4,000	17	
2-Nitrophenol	ug/L	NO (1 2)	ROME	1,600	8,000	NS	
4-Nitrophenol	ug/L	NO HIZE	MD m.OL	470	2,300	NS	
N-Nitrosod/methylamine	ug/L	ND (1.2)	MD (4.0)	3,400	17,000	0.00069	
N-Nitroso-di-n-propylamine	ug/L	ND (1.2)	ND (1.0)	NS	NS	0.005	
N-Nitrosodiphenylamine	ug/L	NO (1 Z)	MD /1.01	59	3000	3.3	
Pentachlorophenol	ug/L	ND (3 C)	ND (2.6)	0.00589	0.00768	0.27	
Phenanthrene	ug/L	ND (1/2)	ND (1.0)	1	5	NS	
Phenol	ug/L	MD (1,21	MD (1.01	NS	NS	21,000	
Pyrene	ug/L	ND (1.2)	NO.11.01	NS	NS	830	
1,2,4-Trichlorobenzene	ug/L	NO (1 2)	NE (1 C)	26	130	35	
2,4,5-Trichlorophenol	ug/L	MD /3 0)	ND (2 6)	NS	NS	NS	
2,4,6-Trichlorophenol	ug/L	(45) (5.2)	ND (1 0)	91	460	1.4	

#### Notes:

5.8

= Results exceed SHS R-U MSC and/or applicable surface water quality criteria.

<sup>1=</sup> Values from 25 Pa Code Chapter 93.8, Table 5; values assume a pH of 6.5 SU and hardness of 100 mg/L, where applicable. Values provided for chromium are for chromium III. Values for chloride, TDS, pH, manganese and Iron from 25 Pa Code Chapter 93.7, Table 3.

 $<sup>^{2}</sup>$ = ND (1 0) = Parameter not detected at the detection limit specified in parentheses.

<sup>3=</sup> No Standard

<sup>\*=</sup> The specific water quality criteria for total recoverable iron is for aquatic life uses and is expressed as a 30-day average concentration. The water quality criteria for human health is expressed as dissolved Iron. See 25 PA Code Section 93.7.

<sup>&</sup>lt;sup>δ</sup>= As total xylenes.

<sup>5=</sup> As total xylenes.

# Table 4.4-1 Analytical Results for Soil Costello 1 Wellsite

Sample Identification		COSTELLO-1-B1	COSTELLO-1-B2	SOIL Residential Used Aquifer MSCs <sup>1</sup>
Sample Date		5/25/2010	5/25/2010	III.OS
Parameter General Chemistry Analyses	Units		MILESON GEOGRAPH	THE PERSON NAMED IN COLUMN
	%	0.4	8.2	NS <sup>3</sup>
Percent Moisture (ASTM D2974-87) Nitrogen, Ammonia (EPA 350.1)	mg/kg	9.1 12.4	7.2	1,900
Chloride (SM 4500-CI-E)		MD43.012	NE (3.0)	NS
Surfactants (MBAS, SM 5540C)	mg/L mg/L		MD 10 101	NS
Ethylene Glycol (EPA 8015)	mg/kg	4(0.70.10) 40.610.0)	ND (10.0)	1400
Metals Analyses (6010B/7471)	mg/kg	And the second second second	AND THE PROPERTY OF	THE PARTY OF THE P
Aluminum	mg/kg	12,800	11,700	190,000
Antimony	mg/kg	ND (0.39)	MD (0.88)	27
Arsenic	mg/kg	12.5	10.1	12
Barium	mg/kg	72.3	64.2	8,200
Beryllium	mg/kg	0.6	0,52	320
Boron	mg/kg	7.4	6,5	1900
Cadmium	mg/kg	0.32	0.36	38
Calcium	mg/kg	899	721	NS
Chromium	mg/kg	14 4	12.6	190,000°
Cobalt	mg/kg	8.6	9.6	50
Copper	mg/kg	13.4	13,7	8,100
ron	mg/kg	23,500	22,400	150,000
Lead	mg/kg	13.1	15.5	450
Vlagnesium	mg/kg	3,820	3,710	NS
Manganese	mg/kg	520	701	2,000
Molybdenum	mg/kg	110 (1-5)	NO (1.5)	650
Vickel	mg/kg	19.3	19.5	650
Potassium	mg/kg	1,450	1,440	NS
Selenium	mg/kg	0.5	NO.00.231	26
Silver	mg/kg	0.22	0.21	84
Sodium	mg/kg	ND ISET:	AD (395)	NS
Thallium	mg/kg	MD (1.3)	hD (1.5)	14
Vanadium	mg/kg	18.1	13.2	1,500
Zinc Mercury	mg/kg	58.4	58.6	12, <mark>00</mark> 0
VOC Analyses (8260)	mg/kg	ND (Gre)	ND (0 15)	10
	malka	Mis to payer	l tem to onsert	20
1,1,1-Trichloroethane	mg/kg	ND (0.0048)	ND (0.0084)	20
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane	mg/kg	HD (0.0045)	MO (5 0064)	0.08
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane	mg/kg mg/kg	HD (0.0046)	MO (0.0064) MG (0.0054)	0.08 0.5
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane	mg/kg mg/kg mg/kg	HD (0 0046) MD (0 0046) HD (0 0046)	NO (0.0064) NO (0.0064) ND (0.0064)	0.08 0.5 3.1
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane	mg/kg mg/kg mg/kg mg/kg	HD (0.0046) MD (0.0046) HD (0.0046) HD (0.0048)	MO (0.0064) MO (0.0954) MD (0.0054) MD (0.0064)	0.08 0.5 3.1 0.7
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2,4-Trimethylbenzene	mg/kg mg/kg mg/kg mg/kg mg/kg	HD (0.0046)  MD (0.0046)  HD (0.0046)  HD (0.0046)  HD (0.0048)	NO 75 0084) NO 75 0084) NO 75 0084) NO 75 0084) NO 75 0084)	0.08 0.5 3.1 0.7 8.4
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2,4-Trimethylbenzene 1,2-Dichlorobenzene	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	HD (0.0046) MD (0.0046) HD (0.0046) HD (0.0048)	MO (0.0064) MO (0.0954) MD (0.0054) MD (0.0064)	0.08 0.5 3.1 0.7
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-4-Trimethylbenzene 1,2-Dichlorobenzene 1,2-Dichloroethane	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	HD (0 0046) MD (0 0048) HD (0 0048) HD (0 0048) MD (0 0048) MD (0 0048) MD (0 0048) MD (0 0048)	NO (0 0064) NO (0 0064) ND (0.0064) ND (0.0064) ND (0 0064) NO (0 0064) NO (0 0064)	0.08 0.5 3.1 0.7 8.4 60
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-A-Trimethylbenzene 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	HD (0 0046) HD (0 0046) HD (0 0046) HD (0 0046) HD (0 0046) HD (0 0048)	MO (3 0064) MC (0.0054) MD (0.0064) MD (0.0064) MD (0.0064) MD (0.0064)	0.08 0.5 3.1 0.7 8.4 60
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Trimethylbenzene 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	HD (0 0046) MD (0 0046) HD (0 0046)	MO (0.0064) MD (0.0160)	0.08 0.5 3.1 0.7 8.4 60 0.5 7°
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Trimethylbenzene 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloropenzene 1,3-Dichloropenzene 1,3-Trimethylbenzene	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	HD (0.0046) MD (0.0048)	MO (0.0084) MG (0.0084) MD (0.0084)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5
1,1,1-Trichloroethane 1,1,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Trimethylbenzene 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,3-Dichloropopane	mg/kg	HD (0 0046) MD (0 0048) MD (0 0048)	MO (0.0064) MC (0.0064) MD (0.0064)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2,1-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,3-5-Trimethylbenzene 1,3-5-Trimethylbenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene 2-Butanone (MEK)	mg/kg	HD (0.0045) MD (0.0046)	NO (0 0064) NO (0 0064) NO (0 0066) NO (0 0064)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Trimethylbenzene 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloropenzene 1,3-Dichloropenzene 1,3-Dichlorobenzene 1,3-Dichlorobenzene 1,3-Dichlorobenzene 1,3-Dichlorobenzene 1,3-Dichlorobenzene 1,3-Dichlorobenzene	mg/kg	HD (0 0046) MD (0 0048) MD (0 0088) MD (0 0088) MD (0 0088)	MO (0.0064) MD (0.0064)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloropena	mg/kg	HD (0 0046) MD (0 0046)	MO (0 0064) MC (0 0064) MD (0 0066) MD (0 0066) MD (0 0066)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61 10 400 1.1
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-A-Trimethylbenzene 1,2-Dichlorobenzene 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,3-Dichloropropane 1,3-5-Trimethylbenzene 1,3-5-Trimethylbenzene 1,4-Dichlorobenzene 2-Butanone (MEK) 2-Hexanone 4-Methyl-2-pentanone (MIBK) Acetone	mg/kg	HD (0 0045) MD (0 0085)	NO (0 0064)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61 10 400 1.1 290 3.300
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloropropane 1,3-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene 2-Butanone (MEK) 2-Hexanone 1-Methyl-2-pentanone (MIBK) Acetone 3-Barzene	mg/kg	HD (0 0045) MD (0 0045) MD (0 0046)	MO (0 0064) MC (0 0064) MD (0 0066) MD (0 0066) MD (0 0066)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61 10 400 1.1
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloropropane 1,3-5-Trimethylbenzene 1,3-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1-Butanone (MEK) 2-Hexanone 1-Methyl-2-pentanone (MIBK) Acetone 3-Borzene 3-romodichloromethane	mg/kg	HD (0 0046) MD (0 0086)	MO (0 0064) MG (0 0064) MG (0 0066) MD (0 0066)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61 10 400 1.1 290 3.300 0.5 8
I,1,1-Trichloroethane I,1,2,2-Tetrachloroethane I,1,2,2-Tetrachloroethane I,1,2-Trichloroethane I,1-Dichloroethane I,1-Dichloroethane I,2-Dichloroethane I,2-Dichloroethane I,2-Dichloroethane I,2-Dichloroethane I,2-Dichloroethane I,3-Dichloropenopane I,3-Dichloropenopane I,3-Dichlorobenzene I,3-Dichlorobenzene I,4-Dichlorobenzene I,4-Dichlorobenzene I-Methyl-2-pentanone (MIBK) Acetone I-Methyl-2-pentanone (MIBK) Acetone I-Mondichloromethane I-Mond	mg/kg	HD (0 0045) MD (0 0045) MD (0 0046) MD (0 0048) MD (0 0088)	MO (0 0064) MC (0 0064) MC (0 0064) MD (0 0064)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61 10 400 1.1 290 3,300 0.5 8
I,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2,1-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Bichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,3-Dichloropropane 1,3-5-Trimethylbenzene 1,3-Dichlorobenzene 1,3-Dichlorobenzene 2-Butanone (MEK) 2-Hexanone 3-Butanone (MEK) 3-Cetone 3-Grzene	mg/kg	HD (0 0045) MD (0 0046) MD (0 0046) MD (0 0046) MD (0 0046)	MO (0 0064) MD (0 0064)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61 10 400 1.1 290 3.300 0.5 8
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-A-Trimethylbenzene 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,3-Dichloroethane 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,4-Dichlorobenzene 2-Butanone (MEK) 2-Hexanone 3-Hexanone 3-Rotene	mg/kg	HD (0 0045) HD (0 0046) HD (0 0086) HD (0 0086) HD (0 0086) HD (0 0046)	MO (0 0054) MD (0 0054)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61 10 400 1.1 290 3.300 0.5 8 8 1
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,3-Dichlorobenzene 1,3-Dichlorobenzene 1,3-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1-Butanone (MEK) 2-Hexanone 1-Methyl-2-pentanone (MIBK) Acetone 3-ornoethane	mg/kg	HD (0 0046)  MD (0 0046)	MO (0 0064)  MG (0 0064)  MG (0 0066)  MD (0 0066)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61 10 400 1.1 290 3.300 0.5 8 8 1 150 0.5
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,3-Dichlorobenzane 1,3-Dichlorobenzane 1,3-Dichlorobenzane 1,3-Dichlorobenzane 1,3-Dichlorobenzane 1,3-Dichlorobenzane 1,3-Dichlorobenzane 2-Butanone (MEK) 2-Hexanone 1-Methyl-2-pentanone (MIBK) Acetone 3-Bornzane 3-Bornodichloromethane 3-Bornodom 3-Bornomethane 3-Bornodom 3-Bornomethane 3-Bornodom disulfide Carbon tetrachloride Chlorobenzane	mg/kg	HD (0 0046)  MD (0 0046)	MO (0 0064) MC (0 0064) MC (0 0066)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61 10 400 1.1 290 3.300 0.5 8 8 1 1 150 0.5
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,3-Dichloropropane 1,3-Dichloropropane 1,3-Dichlorobenzene 2-Butanone (MEK) 2-Hexanone 4-Methyl-2-pentanone (MIBK) Acetone Berrzene Berrzene Berromofichloromethane Bromodichloromethane Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane	mg/kg	ND (0 0045) ND (0 0045) ND (0 0046)	MO (0 0064) MD (0 0064)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61 10 400 1.1 290 3.300 0.5 8 8 1 1 150 0.5 10 23
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2,1-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,3-5-Trimethylbenzene 1,3-5-Trimethylbenzene 1,3-Dichlorobenzene 2-Butanone (MEK) 2-Hexanone 4-Methyl-2-pentanone (MIBK) Acetone Benzene Bromodichloromethane Bromoform Bromomethane Carbon disulfide Carbon tetrachloride Chloroethane Chloroform	mg/kg	HD (0 0045) MD (0 0045) MD (0 0046)	MO (0 0054) MC (0 0054) MC (0 0056) MD (0 0056)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61 10 400 1.1 290 3.300 0.5 8 8 1 1 150 0.5 10 23 8
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,3-Dichlorobenzene 1,3-Dichlorobenzene 1,3-Dichlorobenzene 2-Butanone (MEK) 2-Hexanone 2-Butanone (MEK) 2-Hexanone 3-Methyl-2-pentanone (MIBK) Acetone 3-Bornomform 3-Bornomform 3-Bornomform 3-Bornomform 3-Bornomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloroform Chloromethane	mg/kg	HD (0 0045) MD (0 0045) MD (0 0046)	MO (0 0064)  MD (0 0064)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61 10 400 1.1 290 3.300 0.5 8 8 1 150 0.5 10 23 8 3
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,3-Dichloropropane 1,3-Trimethylbenzane 1,3-Trimethylbenzane 1,3-Dichlorobenzane 2-Butanone (MEK) 2-Hexanone 4-Methyl-2-pentanone (MIBK) Acetone Berzene Berzene Bromodichloromethane Bromodichloromethane Carbon disulfide Carbon tetrachloride Chloroethane Chloroethane Chloroethane Chlororethane Cis-1,2-Dichloroethene	mg/kg	HD (0 0045) MD (0 0045) MD (0 0046) MD (0 0048)	MO (0 0064) MC (0 0064) MC (0 0066)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61 10 400 1.1 290 3.300 0.5 8 8 1 150 0.5 10 23 8 3 7
1,1,1-Trichloroethane 1,1,2,2-Tetrachloroethane 1,1,2-Trichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,3-Dichlorobenzene 1,3-Dichlorobenzene 1,3-Dichlorobenzene 2-Butanone (MEK) 2-Hexanone 2-Butanone (MEK) 2-Hexanone 3-Methyl-2-pentanone (MIBK) Acetone 3-Bornomform 3-Bornomform 3-Bornomform 3-Bornomform 3-Bornomethane Carbon disulfide Carbon tetrachloride Chlorobenzene Chloroethane Chloroform Chloroform Chloromethane	mg/kg	HD (0 0046) MD (0 0046)	MO (0 0064)  MD (0 0064)	0.08 0.5 3.1 0.7 8.4 60 0.5 7° 0.5 2.3 61 10 400 1.1 290 3.300 0.5 8 8 1 150 0.5 10 23 8 3

# Table 4.4-1 Analytical Results for Soil Costello 1 Wellsite

Sample Identification		COSTELLO-1-B1	COSTELLO-1-B2	SOIL Residential Used Aquifer MSCs <sup>1</sup>
Sample Date Parameter	Units	5/25/2010	5/25/2010	
VOC Analyses (8260)	Service (III	to the appropriate		
sopropylbenzene (Cumene)	mg/kg	ME 10 00491	HD (0.0054)	600
m&p-Xylene	mg/kg	MC 10 0096)	18010 01 ON	1,000°
Methylene Chloride	mg/kg	ME (0.0046)	MD (0,0054)	0.5
Methyl-tert-butyl ether	mg/kg	WE (0.0648)	MD 70 0054	2
Vaphthalene	mg/kg	MD (0.0048)	N5 (0 0064)	25
n-Butylbenzene	mg/kg	ND (0.0049)	MD (0.0054)	950
n-Propylbenzene	mg/kg	ND 10 (049)	ND (0.3054)	290
o-Xylene	mg/kg	ME (0.0048)	ND (0.6054)	1,0008
o-Isopropyltoluene	mg/kg	HE 70,00#\$)	MD (8 3364)	NS
sec-Butylbenzene	mg/kg	HD (0.0049)	MEI (0.0054)	350
Styrene	mg/kg	NC (0.0049)	MD (0.0054)	24
Tetrachloroethene	mg/kg	4D (0.0048)	MD (0.0054)	0.5
Foluene	mg/kg	*10 (0 0049)	NO (0.0054)	100
FOTAL BTEX	mg/kg	ND (0 0293)	MD (0 0324)	NS 10
rans-1,2-Dichloroethene rans-1,3-Dichloropropene	mg/kg	NO (0.0048) NE (0.0048)	ND 10 00541	0.66
rans-1,3-Dichloroproperie	mg/kg mg/kg	ND (0.0045)	MD 49.00541 MD 49.00541	0.5
/inyl chloride		NO (0.0049)	MO (0 0054)	0.5
(ylene (Total)	mg/kg	NO 10 01481		1,000 <sup>5</sup>
SVOC Analyses (8270)	mg/kg	AL INDIES	AD (0.0162)	1,000
1.2.4-Trichlorobenzene	malka	PID (0.356)	MD (C 354)	27
1,2-Dichlorobenzene	mg/kg mg/kg	(D (0.953)	WD (0.354)	60
,3-Dichlorobenzene	mg/kg	E 10.9861	70 (0,054)	61
.4-Dichlorobenzene	mg/kg	ND 19.385	MD (0.384)	10
2.4.5-Trichlorophenol	mg/kg	ND (0.888)	ND (0.885)	2,300
2.4,6-Trichlorophenol	mg/kg	MD (0.385)	ND (0.064)	11
2.4-Dichlorophenol	mg/kg	HO (0,385)	ND (0.384)	2
4-Dimethylphenol	mg/kg	ND /0 355)	MD (0.354)	73
4-Dinitrophenol	mg/kg	MD (0.086)	ND (0.888)	7.3
2.4-Dinitrotoluene	mg/kg	PD (0.355)	NO 10 350)	0.21
2.6-Dinitrotoluene	mg/kg	WC//C 355)	HD (0.35=)	3.7
2-Chloronaphthalene	mg/kg	MD (G.355)	MD 10 354)	6,200
2-Chlorophenol	mg/kg	HD (0.265)	510 10 254)	4.4
2-Methylnaphthalene	mg/kg	HD (0.355)	MD-70 3541	600
2-Methylphenol(o-Cresol)	mg/kg	ND (0.255)	ND (0.354)	180
2-Nitroaniline	mg/kg	MO (0.388)	ND (0.038)	11
2-Nitrophenel	mg/kg	MO (0.355)	MD (6:354)	29
8&4-Methylphenol(m&p Cresol)	mg/kg	MD (0.710)	ND (0.708)	187
3,3'-Dichlorobenzidine	mg/kg	ND /0 3661	(4D (0.354)	8.3
-Nitroaniline	mg/kg	15 (0.888)	71D (C 885)	1,1
.6-Dinitro-2-methylphenol	mg/kg	NO (0.088)	,208 O) CM	0.37
I-Bromophenylphenyl ether	mg/kg	MO (0.355)	ND t0 3541	NS
I-Chloro-3-methylphenol	mg/kg	MC (0.385)	MD (0.354)	37
I-Chloroaniline	mg/kg	ND (0.355)	4D (0.354)	0.42
-Chlorophenylphenyl ether	mg/kg	MD 13.366)	ND (0.354)	NS
-Nitroaniline	mg/kg	NO 10 8991	NE (0.888)	3.3
-Nitrophenol	mg/kg	MD (U.883)	(VD (0.35A)	6
cenaphthene	mg/kg	MD (0.355)	MD (0 350)	2,700
cenaphthylene	mg/kg	(0.065) UNI	ND (0.354)	2,500
nthracene	mg/kg	HD (0.355)	MD (6:354)	350
enzo(a)anthracene	mg/kg	MD 70 355,	MD (0.054)	5.7
enzo(a)pyrene	mg/kg	MD (0.365)	MP 10 3541	0.57
enzo(b)fluoranthene	mg/kg	MD (0.355)	MD (0.354)	5.7
enzo(g,h,i)perylene	mg/kg	ND (0.355)	ND (0.354)	180
enzo(k)fluoranthene	mg/kg	ND (0 355)	MD (0 954)	57
lenzyl alcohol	mg/kg	HD (0.355)	MD (0.354)	1,800
ois(2-Chloroethoxy)methane	mg/kg	- ND (0.838)	(+88 9) GP	11
is(2-Chloroethyl) ether	mg/kg	ND (0.935)	NO (0.354)	0.015
is(2-Chloroisopropyl) ether	mg/kg	MD (0.385)	NE (0.354)	30
ois(2-Ethylhexyl)phthalate	mg/kg	NO (0.255)	NO (0.354)	130
Butylbenzylphthalate	mg/kg	MD (0.355)	10.384	3,000

#### Table 4.4-1 Analytical Results for Soll Costello 1 Wellsite

Dimock, Township Susquehana County, PA

Sample Identification Sample Date	Units	COSTELLO-1-B1 5/25/2010	COSTELLO-1-B2 5/25/2010	SOIL Residential Used Aquifer MSCs <sup>1</sup>
SVOC Analyses (8270)		PERSONAL PROPERTY.	E-VARIETY .	THE RESERVE OF THE PARTY NAMED IN COLUMN TWO IS NOT THE PARTY NAMED IN COLUMN TWO IS
Chrysene	mg/kg	ND (0.365)	ND (0 354	230
Dibenz(a,h)anthracene	mg/kg	MD (0.355)	1/240.03241	0.57
Dibenzofuran	mg/kg	ND (0.355)	NO (0.354)	95
Diethylphthalate	mg/kg	ND (0.355)	ND (C 354)	2,900
Dimethylphthalate	mg/kg	NO (0.265)	ND (0.954)	NS
Di-n-butyiphthalate	mg/kg	ND (0.355)	mD (0.354)	1,500
Di-n-octylphthalate	mg/kg	MO (D 355)	MC 10 3641	8,800
Fluoranthene	mg/kg	ND (0.355)	NO 10 SEM	3,200
Fluorene	mg/kg	MD 10(385)	D (0.354)	3,000
Hexachloro-1,3-butadiene	mg/kg	ND (0.385)	ND (0.354)	10
Hexachlorobenzene	mg/kg	ND (0.385)	MD (0.354)	0.96
Hexachlorocyclopentadiene	mg/kg	ND (0.355)	-ND 10.064)	91
Hexachloroethane	mg/kg	MD (0.353)	WID 10 354"	0.56
Indeno(1,2,3-cd)pyrene	mg/kg	MD 10 355"	ND/0354	5.7
Isophorone	mg/kg	NC (5,358)	ND (0.354)	10
Naphthalene	mg/kg	ND (0.358)	WD10.254;	25
Nitrobenzene	mg/kg	ND (0 355)	AD (0 934)	7.3
N-Nitroso-di-n-propylamine	mg/kg	ND (0.355)	NO (0.354)	0.0094
N-Nitrosodiphenylamine	mg/kg	ND (0.355)	ND (0.354)	20
Pentachlorophenol	mg/kg	NE.(0.882)	r:D (0.886)	5
Phenanthrene	mg/kg	ND (0.355)	MC (0.554)	10,000
Phenol	mg/kg	MD (0 355)	ND (0.354)	200
Pyrene	mg/kg	ND (U.335)	PETO,354)	2,200

12.5

=Result exceeds SHS Residential, Used Aquifer MSC

Page 3 or 3

Notes:

1 = Medium-Specific Concentrations (MSCs) were established from the Residential, Used Aquifer with TDS < 2500 MSCs Soil to Groundwater Numeric Values listed in Appendix A, Table 3 and Table 4 of 25 PA Code Section 250 Administration of the Land Recycling Act (Act 2) regulations.

2 = ND (3.0) = Parameter not detected at the detection limit specified in parentheses.

3-No Standard

<sup>&</sup>lt;sup>3</sup>=No Standard

<sup>4=</sup>as Chromlum III.

<sup>5=</sup>as c/s-1, 2 - Dichloroethlene

<sup>&</sup>lt;sup>6</sup>=as Total xylenes.

<sup>7=</sup>as p-Cresol

# Table 4.4-2 Analytical Results for Surface Water Costello 1 Wellsite

CI- Id		COSTELLO #1	COSTELLO #1	COSTELLO #1		9	
Sample Identification	3	Α	В	С	Surface	Water Quality	Criteria <sup>1</sup>
Sample Location	i	Upgradient	Pond	Downgradient	Fish and	Fish and	8
CAN NOT FRANCE		A 157	40/40/0000	S	Aquatic Life	Aquatic Life	Human Health
Sample Date	200.000 2000	12/10/2009	12/10/2009	12/10/2009	Criteria -	Criteria -	Criteria
Parameter	Units				Chronic	Acute	
General Chemistry	I #	ND (10.0)2	NO CON	VED ((C.O.)	NS <sup>3</sup>	N.C.	N.C.
Acidity, Total (SM 2310B) Alkalinity, Total as CaCO3 (SM 2320B)	mg/L mg/L	26	ND (18.0) 40	24	NS	NS NS	NS NS
Nitrogen, Ammonia (EPA 350.1)	mg/L	ND (0,40)	KD (0.10)	ME (0.10)	NS	NS	NS
Chloride (SM 4500-CI-E)	mg/L	71.2	3.3	56.9	NS	NS	250
Surfactants (SM 5540C)	mg/L	ALC: (0)	NO 70,10)	10 to 10.401	NS	NS	NS
pH (SM 4500-H+B)	Std. Units	7.4	6.8	7.4	6.0-		NS
Total Dissolved Solids (SM 2540C)	mg/L	171	28	154	NS	NS	750
Diesel Components (EPA 8015B Mod)	mg/L	ND (0.11)	ND (0.11)	50 (C.11)	NS	NS	NS
TPH (C06-C10) (EPA 8015B Mod)  Total Petroleum Hydrocarbons (EPA 1664A)	ug/L mg/L	ND (200) ND (4.8)	ND (200)	1002, QN 10,51 GM	NS NS	NS NS	NS NS
Total Metals Analyses (6010B/7471)	I IIIg/L	NO PLOS	A A CONTRACTOR OF THE PARTY OF		No.	Carlo Sales Sales	IN 3
Aluminum	ug/L	125	4,710	73	NS	750	l NS
Antimony	ug/L	ND (5.0)	NO (5.0)	PED (5.0)	220	1,100	5.6
Arsenic	ug/L	ND 15.01	ND (5.0)	MD (5.0)	150	340	10
Barium	ug/L	41.8	57.3	39.3	4,100	21,000	2,400
Beryllium	ug/L	ND (1_0)	ND (1.0)	ND M.CV	NS	NS	NS
Boron	ug/L	MD (50.0)	ALD (58.0)	ND (69.0)	1,600	8,100	3,100
Cadmium Calaium	ug/L	ND (1.0)	MD (1.0)	16 000	NS NS	NS NS	NS
Calcium Chromium	ug/L ug/L	17,600 ND (5.0)	4,660 ND (5.0)	16,900 NO (5,0)	NS NS	NS	NS NS
Cobalt	ug/L	MC (5.0)	ND (5.0)	ND (5.0)	19	95	NS
Copper	ug/L	ND (5.0)	19.4	MO /5.0)	NS	NS	NS
Iron	ug/L	192	5,860	114	1,500°	1,500°	NS*
Lead	ug/L	10.53 08	13.1	MD (2.0)	NS	NS	NS
Magnesium	ug/L	3,830	2,140	3,630	NS	NS	NS
Manganese	ug/L	17.8	429	6.2	NS	NS	1,000
Molybdenum	ug/L	NO (10.0)	ND (10.0)	ND (10.0)	NS	NS	NS
Nickel Potassium	ug/L ug/L	2,730	3,060	2,350	NS NS	NS NS	NS NS
Selenium	ug/L ua/L	P4D (5.0)	ND (5.0)	2,350 MD (5.0)	NS	NS	NS
Silver	ug/L	ND (1 0)	NEUTO	(0.1) CV	NS	NS	NS
Sodium	ug/L	32,300	1,570	25,700	NS	NS	NS
Thallium	ug/L	MD (10.0)	ND (10.0)	ND (10.01	13	65	0.24
Vanadium	ug/L	ND (5.01	7.4	ND (5.0)	100	510	NS
Zinc	ug/L	ND (10.0)	43.4	ND (10.0)	NS	NS	NS
Mercury	ug/L	MD (0.30)	ND (0,20)	IND 10.201	NS	NS	NS
Dissolved Metals Analyses (6010/7471) Aluminum, Dissolved	I wall I	ND (50.0)	ND (50.01	ND (50.0)	NS	NS	NO.
Antimony, Dissolved	ug/L ug/L	MD (5.01	MD (5.0)	ND 5.01	NS	NS	NS NS
Arsenic, Dissolved	ug/L	(ID (5.0)	ND (5.0)	ND (5.0)	NS	NS	NS
Barium, Dissolved	ug/L	43.4	MD (10.5)	39.8	NS	NS	NS
Beryllium, Dissolved	ug/L	(D, C) Chi	וס.ח סא	ND !! OI	NS	NS	NS
Boron, Dissolved	ug/L	ND (60.0)	ND (50.6)	(ND (50.0)	NS	NS	NS
Cadmium, Dissolved	ug/L	ND (1.0)	ND (1.0)	(0.1) GM	0.25	2.01	NS
Calcium, Dissolved	ug/L	17,600	3,120	16,500	NS	NS	NS
Chromium, Dissolved Cobalt, Dissolved	ug/L ug/L	ND (5.0)	ND (5,0) ND (6,0)	MD (6.0) MD (5.0)	74.1 NS	569.8 NS	NS NS
Copper, Dissolved	ug/L ug/L	ND (5.0)	ND (5.9)	VD (5.0)	9.0	13	NS
Iron, Dissolved	ug/L	64.8	131	ND (50.0)	NS.	NS	300
Lead, Dissolved	⊌g/L	ND (2.0)	ND (2.0)	ND (2.0)	2.5	64.6	NS
Magnesium, Dissolved	ug/L	3,810	803	3,520	NS	NS	NS
Manganese, Dissolved	ug/L	12.2	ND (5.0)	8	NS	NS	NS
Molybdenum, Dissolved	ug/L	(8.6.) CM	NE MO DI	ND (10.0)	NS	NS	NS
Nickel, Dissolved	ug/L	ND (10.0)	ND (10.0)	HD (10,0)	52	470	610
Potassium, Dissolved Selenium, Dissolved	ug/L ug/L	2,700 MD (5.0)	2,060 ND (5.0)	2,270 ND (5,0)	NS 4.6	NS NS	NS
	ug/L ug/L	ND FLOI	ND (1.0)	ND (1.0)	NS NS	3.2	NS NS
			1,550	25,100	NS	NS	NS
Silver, Dissolved	ua/l	32,000					
Sodium, Dissolved Thallium, Dissolved	ug/L ug/L	32,000 ND 10.01	MD (10.0)	MD (10.6)			
Sadium, Dissolved		ND (10,0) ND (5,0)	MD (10.5) ND (5.0)	MD (10.6) MD (5.0)	NS NS	NS NS	NS NS
Sodium, Dissolved Thallium, Dissolved	ug/L	ND 110.01	MD (18.9)	(4D (10.6)	NS	NS	NS

### Table 4,4-2 Analytical Results for Surface Water Costello 1 Wellsite

Sample Identification		COSTELLO #1	COSTELLO #1	COSTELLO #1	Surface Water Quality Criteria <sup>1</sup>		
Sample Location		Upgradient	Pond	Downgradient	Fish and	Fish and	
					Aquatic Life	Aquatic Life	Human Health
Sample Date		12/10/2009	12/10/2009	12/10/2009	Criteria -	Criteria -	Criteria
Parameter	Units				Chronic	Acute	
VOCs Analyses (8260)	NAME OF STREET	ESPANA SALVA	THE WAS SOLD	ALLENS AVAILABLE	O STATE OF THE PARTY OF THE PAR		THE PERSON AND
1,1,1-Trichloroethane	ug/L	MD (1.3)	ND M CM	NE (4.0)	610	3,000	NS
1,1,2,2-Tetrachloroethane	ug/L	160-85-031	ME (1,2)	NO (5.0)	210	1,000	0.17
1,1,2-Trichloroethane	ug/L	ND (1,0)	(0.1)(D)	ND (E.S) _	680	3,400	0.59
1,1-Dichloroethane	ug/L	ND (1.0)	NO (L.5)	NO PUR	NS	NS	NS
1,1-Dichloroethene	ug/L	ND (1.0)	MD (1.0)	VD (1.0)	1,500	7,500	33
1,2,4-Trichlorobenzene	ug/L	190 (10.0)	ND (1.0)	MD (1.0)	26	130	35
1,2,4-Trimethylbenzene	ug/L	MD (1.0)	(0.1) OF	ND (5.0)	NS	NS	NS
1,2-Dichlorobenzene	ug/L	MD (1.0)	MD (H.D)	MD (1-0)	160	820	420
1,2-Dichloroethane	ug/L	ND (1.0)	(社局)	ND (1.0)	3,100	15,000	0.38
1,2-Dichloroethene (Total)	ug/L	ND (1.0)	40 M GN	ND (1.0)	NS	NS	NS
1,2-Dichloropropane	ug/L	NO (1.0)	ND (1.01	MD (1.0)	2,200	11,000	NS
1,3,5-Trimethylbenzene	ug/L	MD (1.0)	HD (1.0)	ND (1.0)	NS	NS	NS
1,3-Dichlorobenzene	ug/L	RD (1.0)	ND (1.0)	MD (1.0)	69	350	420
1,4-Dichlorobenzene	ug/L	MD (5.0)	MD MLO)	(0,7) GM	150	730	420
2-Butanone (MEK)	ug/L	레마 (10.0)	MD (40.0)	MD (18.0)	32,000	230,000	21,000
2-Hexanone	ug/L	(0,01) CM	MD (10.0)	NO (10.0)	4,300	21,000	NS
4-Methyl-2-pentanone (MIBK)	ug/L	MD (40.0)	ND (10,0)	MD (10.0)	5,000	26,000	NS
Acetone	ug/L	(0.0r) (3ki	MD (10.0)	MD (10.01	86,000	450,000	3,500
Benzene	ug/L	ND (1.0)	MD (1.0)	MD (1.0)	130	640	1.2
Bromochloromethane	ug/L	ND (1.0)	HP (1.0)	ND (1.0)	NS	NS	NS
Bromodichloromethane	ug/L	MD (1.0)	ND (1,0)	ND (1.0)	NS	NS	0.55
Bromoform	ug/L	ND (1.0)	ND (1.0)	(0.1) QW	370	1,800	4.3
Bromomethane	ug/L	MO (1.01	ND (10.0)	NE) (1.0)	110	550	47
Carbon disulfide	ug/L	ND (1.0)	(0,2° DIN	(0.t) OH	NS	NS	NS
Carbon tetrachloride	ug/L	NED (10,0)	MD.44.01	ALD (1.D)	560	2,800	0.23
Chlorobenzene	ug/L	MD (1,0)	NO PLAN	NE (1.0)	240	1,200	130
Chloroethane	ug/L	ND (1.0)	ND (1.0)	ND (1.0)	NS	NS	NS
Chloroform	ug/L	ND (1,0)	NE (1.0)	ND (1.0)	390	1,900	5.7
Chloromethane	ug/L	MD:(1.01	MD (1.0)	ND (1.0)	5,500	28,000	NS
cis-1,2-Dichloroethene	ug/L	(1.0)	MD (4.0)	MD (1.0)	NS	NS	NS
cis-1,3-Dichloropropene	ug/L	1(10,11,0)	(0, I) (II)	- NO CLOY	61	310	0.34
Dibromochloromethane	ug/L	10 (1.0)	PID (1.0)	ND (1.0)	NS	NS	0,4
Ethylbenzene	ug/L	NO (1.0)	ND (1.8)	MD (1 0)	580	2,900	530
Isopropylbenzene (Cumene)	ug/L	ND (1.0)	ND (*.0)	VD (fl.at	NS	NS	NS
m&p-Xylene	ug/L	ND (2,0)	ND (2.0)	(0.0) GM	210 <sup>5</sup>	1,1006	70,000 <sup>3</sup>
Methylene Chloride	ug/L	ND (1.0)	ND (1.0)	HD (1.0)	2,400	12,000	4.6
Methyl-tert-butyl ether	ug/L	HD (1.0)	(0.1) GV	10.11 CA	NS	NS	NS
Naphthalene	ug/L	ND (2.0)	MD (2.0)	MD (2,0)	43	140	NS
n-Butylbenzene	ug/L	NO IS OY	MD (\$,01	NEX(1.0)	NS	NS	NS
n-Propylbenzene	ug/L	(1,0) ON	MD (1.0)	NO (1.0)	NS	NS	NS
o-Xylene	ug/L	ND (1.01	ND (1.0)	(4,0) (H)	210 <sup>5</sup>	1,100 <sup>5</sup>	70,000 <sup>8</sup>
p-Isopropyltoluene	ug/L	MD (1.0°	ND (1.0)	PLD (1.0)	NS	NS	NS
sec-Butylbenzene	ug/L	ND (1.0)	ND (> 0)	MD (1.0)	NS	NS	NS
Styrene	ug/L	ND (1.0)	ND (1 0)	(0.1) GM	NS	NS	NS
Tetrachloroethene	ug/L	ND (1.0)	ND (1.0)	ND (5.0)	140	700	0.69
Toluene	ug/L	NO (1.0)	(0.0) (DI)	HD (1.0)	330	1,700	1,300
trans-1,2-Dichloroethene	ug/L	ND (1.0)	((0.1) (0))	ND (10)	1,400	6,800	140
trans-1,3-Dichloropropene	ug/L	HD (1.01	MD (1.0)	ND (1.0)	61	310	0.34
Trichloroethene	ug/L	10.11.CN	(0.1) DN	ND (1.0)	450	2,300	2.5
Vinyl chloride	ug/L	40 (1 0)	ND (1.0)	ND (10)	NS	NS	0.025
Xylene (Total)	ug/L	NE (3.0)	(3.0) מא	ND (3.0)	210	1,100	700,00

# Table 4.4-2 Analytical Results for Surface Water Costello 1 Wellsite

Sample Identification		COSTELLO #1	COSTELLO #1	COSTELLO #1	Surface Water Quality Criteria <sup>1</sup>		
2 710 710					Fish and	Fish and	T
Sample Location		Upgradient	Pond	Downgradient	Aquatic Life	Aquatic Life	Human Health
Sample Date		12/10/2009	12/10/2009	12/10/2009	Criteria -	Criteria -	Criteria
Parameter	Units				Chronic	Acute	Ontena
SVOCs Analyses (8270)	Office	THE REAL PROPERTY.	Marstal Ballion Grant B.	NO VINE AND ADDRESS OF	Onone	Acute	Section 1
1,2,4-Trichlorobenzene	ug/L	NS (1.0)	NO (13)	NO (1,0)	26	130	35
1,2-Dichlorobenzene	ug/L	ND (1.0)	ND 11.41	NO (5.2)	160	820	420
1,3-Dichlorobenzene	ug/L	NO M.DI	NO (1.1)	ND (1.2)	69	350	420
1,4-Dichlorobenzene	ug/L	ND (1.0)	- NO (1.1)	ND (5.2)	150	730	420
1-Methylnaphthalene	ug/L	ND (1.0)	NO (5.5)	RUME	NS	NS	NS
2,4,5-Trichlorophenol	ug/L	ND (2.8)	NE (2.6)	NO (2.9)	NS	NS	NS
2,4,6-Trichlorophenol	ug/L	ND (1.0)	MD (1.1)	140 (1.2)	91	460	1.4
2,4-Dichlorophenol	ug/L	- ND (1.0)	ND (1.1)	MD (5.2)	340	1,700	77
2,4-Dimethylphenol	ug/L	ND (1.0)	NO (1.1)	NO 17.2)	130	660	380
2,4-Dinitrophenol	ug/L	18.27 (2.4	NE (2.8)	NE (2.9)	320	1,600	0.05
2,4-Dinitrotoluene	ug/L	ND (1.0)	ND (1.3)	ND (1.2)	130	660	69
2,6-Dinitrotoluene	ug/L	- ND (5.0)	ND (1.1)	ND (5.2)	200	990	0.05
2-Chloronaphthalene	ug/L	ME (1.0)	ND (S.1)	ND (1.2)	NS	NS	1,000
2-Chlorophenol	ug/L	NO (5.0)	ND (1.1)	NO (1.2)	NS	NS	NS
2-Methylnaphthalene	ug/L	10 N GW	METHER)	NE (1, 2)	NS	NS	NS
2-Methylphenol(o-Cresol)	ug/L	ND (1.0)	MD (1.1)	ND (1.2)	NS	NS	NS
2-Nitroaniline	ug/L	NE (2.6)	ND (2.8)	HD (2.9)	NS	NS	NS
2-Nitrophenol	ug/L	ND (1.0)	NE GH	ND (5-2)	1,600	8,000	NS
3&4-Methylphenol(m&p Cresol)	ug/L	ND (2.1)	ND (2.1)	NC (124)	NS	NS	NS
3,3'-Dichlorobenzidine	ug/L	ND (1.0)	NO MAI	ND (1.2)	NS	NS	NS
3-Nitroaniline	ug/L	NO (2.5)	(8.2) QVI	MD (2.9)	NS	NS	NS
4,6-Dinitro-2-methylphenol	ug/L	ND (2.6)	ND 23	4D (2.9)	16	80	13
4-Bromophenylphenyl ether	ug/L	ND (1.0)	ND (1.1)	(0.(1,2)	54	270	NS
4-Chloro-3-methylphenol	ug/L	MD (1.0)	MC (1.1)	ND (1.2)	NS	NS	NS
4-Chloroaniline	ug/L	NE (1.0)	ND (1.5)	ND (1.5)	NS	NS	NS
4-Chlorophenylphenyl ether	ug/L	ND (1.0)	ND 55 (1)	ND (1.2)	NS	NS	NS
4-Nitroaniline	ug/L	ND (2.6)	IND (2.3)	(0 '2,3)	NS	NS	NS
4-Nitrophenol	ug/L	WC (1.0)	15 (1.1)	ND (1.2)	470	2,300	NS
		ND (1.0)	MD (1.1)	ND (1.2)	17	83	670
Acenaphthulana	ug/L ug/L	NE (1.0)	NO.(1.1)	NO (1.2)	NS	NS	NS
Acenaphthylene		14D (1,0)	ND (1.4)	ND (1.2)	NS	NS	
Anthracene	ug/L		ND (5.4)		NS NS	NS	8,300
Azobenzene	ug/L	MD (2:0)	ND (1.1)		0.1		NS 0.0029
Benzo(a)anthracene	ug/L	(C.1) GM		ND (1.2)		0.5 NS	0.0038
Benzo(a)pyrene	ug/L	(1,0) (1,0)	MD (5.1)	ND (1.2)	NS		0.0038
Benzo(b)fluoranthene	ug/L	MD (1.0)	FORM STATES	ND (1.2)	NS	NS	0.0038
Benzo(g,h,i)perylene	ug/L	NO (1.0)	ND (1.1)	MD (1.2)	NS	NS	NS
Benzo(k)fluoranthene	ug/L	ND (1.0)	ND (1.1)	ND (1.2)	NS	NS	0.0038
Benzoic acid	ug/L	MD (10.4)	ND (10.8)	MD (11.3)	NS	NS NS	NS
Benzyl alcohol	ug/L	(0,1) QN	ND (5.1)	ND (1.2)	NS		NS
bis(2-Chloroethoxy)methane	ug/L	HD (1.0)	MD (1.1)	I/C (1.2)	NS	NS	NS
bis(2-Chloroethyl) ether	ug/L	ND (1.0)	ND (1:31	ND (1.2)	6,000	30,000	0.03
bis(2-Chloroisopropyl) ether	ug/L	I (D (1 0)	ND (1.1)	110 (1.2)	NS	NS 4.500	1,400
bis(2-Ethylhexyl)phthalate	ug/L	ND (1.0)	ND (1,1)	4D (1 2)	910	4,500	1.2
Butylbenzylphthalate	ug/L	ND (5.0)	ND (1.1)	MD (1.2)	35	140	150
Carbazole	ug/L	ND (1.0)	ND (5.1)	ND (1.2)	NS	NS	NS
Chrysene	ug/L	MD (1.0)	ND (1.1)	ND (5.2)	NS	NS	0.0038
Dibenz(a,h)anthracene	ug/L	ND (1.0)	ND (1.1)	MD (1,2)	NS	NS	0.0038
Dibenzofuran	ug/L	NO (1.01	ND (1.1)	MD (1.2)	NS	NS	NS
Diethylphthalate	ug/L	MD (1.0)	isD (1.1)	ND (1.2)	800	4,000	17,000
Dimethylphthalate	ug/L	(ND (1.0)	ND (1.1)	ND (1.2)	NS	NS	NS
	ug/L	NO FLOY	MD (5.21	MD (1,2)	21	110	2,000
DI-n-butylphthalate		100	- FEE - FEE - 1	1.150			
Di-n-butyiphthalate Di-n-octylphthalate Fluoranthene	ug/L ug/L	(0.1) Qls	ND (5.5)	ND (1.2)	NS 40	NS 200	NS 130

#### Table 4.4-2 Analytical Results for Surface Water Costello 1 Wellsite

Dlmock Township Susquehanna County, PA

Sample Identification		COSTELLO #1	COSTELLO #1	COSTELLO #1	Surface Water Quality Criteria <sup>1</sup>		
Sample Location		Upgradient	Pond	Downgradient	Fish and Aquatic Life	Fish and Aquatic Life	Human Health
Sample Date		12/10/2009	12/10/2009	12/10/2009	Criteria -	Criteria -	Criteria
Parameter	Units				Chronic	Acute	
SVOCs Analyses (8270) Continued	HE FEEL VOICE	REAL PROPERTY.	STATE BOW SOME	VERSENDARS NOT THE	Continue of the	A SHARE	LEVIN NEW
Hexachloro-1,3-butadiene	ug/L	HD M DI	MB79,51	ND (1.2)	2	10	0.44
Hexachlorobenzene	ug/L	20 (1,0)	ND (1.1)	MD (1 S)	NS	NS	0.00028
Hexachlorocyclopentadiene	ug/L	MD (E.C)	HD (S.H)	MD (1.2)	1	5	40
Hexachloroethane	ug/L	NO (4.0)	WD41	ND (5.2)	12	60	1.4
Indeno(1,2,3-cd)pyrene	ug/L	NE (1.0)	ND (4,1)	HD (1.2)	NS	NS	0.0038
Isophorone	ug/L	FID (1.0)	ND (1.1)	MD (1.2)	2,100	10,000	35
Naphthalene	ug/L	NO (1.0)	NO (5.1)	ND (1.2)	43	140	NS
Nitrobenzene	ug/L	10.11) CM	MD (1,5)	NO (1.2)	810	4,000	17
N-Nitrosodimethylamine	ug/L	ND (1.0)	ND MIN	NO (1.2)	3,400	17,000	0.00069
N-Nitroso-di-n-propylamine	ug/L	16.11 GN	NO (1,1)	ND (1.2)	NS	NS	0.005
N-Nitrosodiphenylamine	ug/L	MD (1.0)	ND (1) (1)	ND (1.2)	59	3,000	3.3
Pentachlorophenol	ug/L	MO (2.5)	MD (2,8)	PID (2.8)	0.00589	0.00768	0.27
Phenanthrene	ug/L	ND (1.0)	NO ELST	NO (1.2)	1	5	NS
Phenol	ug/L	NO (1.6)	ND (1.1)	MD (1.2)	NS	NS	21,000
Pyrene	ug/L	NO (1 9)	NO (* 5)	NO (1,2)	NS	NS	830

#### Notes:

5= As total xylones.

5.6 Results aveasd applicable surface water quality criteria

<sup>1=</sup> Values from 25 Pa Code Chapter 93.8, Table 5; values assume a pH of 6.5 SU and hardness of 100 mg/L, where applicable. Values provided for chromium are for chromium III, Values for chloride, TDS, pH, manganese and Iron from 25 Pa Code Chapter 93.7, Table 3.

 $<sup>^{2}</sup>$ = ND (1.0) = Parameter not detected at the detection limit specified in parentheses.

<sup>3=</sup> No Standard

<sup>&</sup>lt;sup>4</sup>= The specific water quality criteria for total recoverable iron is for aquatic life uses and is expressed as a 30-day average concentration. The water quality criteria for human health is expressed as dissolved iron. See 25 PA Code Section 93.7.

<sup>5=</sup> As total xylenes.

#### Table 4.5-1 Analytical Results for Soil (Borehole Locations) Ely 1H/5H/7H SE Wellsite

Sample Identification		ELY-5-B1	ELY-5-B2	ELY-5-B3	ELY-5-B4	SOIL Residential Used Aquifer MSCs <sup>1</sup>
Sample Date	Units	5/25/2010	5/25/2010	5/25/2010	5/25/2010	Aquitet Moos
General Chemistry Analyses	Onita	LL LYST		Challengton,	LASK WELL	delita de la composition della
Percent Moisture (ASTM D2974-87)	%	6.7	18.9	10.9	7.2	NS <sup>3</sup>
Nitrogen, Ammonia (EPA 350.1)	mg/kg	13.6	92.4	45.8	13.1	1,900
Chloride (SM 4500-CI-E)	mg/L	40 (2 0) <sup>2</sup>	MD (3 D)	4.4	PID (3.0)	NS
Surfactants (MBAS, SM 5540C) Ethylene Glycol (EPA 8015)	mg/L	40 10 10 40 10 61	MC MC C	0.11	MD (0.10)	NS 1,400
Matals Analyses (6010B/7471)	mg/kg	A STATE OF THE STA		The Mark	MO WEEL	1,400
Aluminum	mg/kg	11,500	15,400	12,900	13,100	190,000
Antimony	mg/kg	0.33	WE (10, 25)	MC (0 44)	MD (134)	27
Arsenic	mg/kg	2.8	2.7	1.7	2.2	12
Barium	mg/kg	62.4	109	76.9	126	8,200
Beryllium	mg/kg	0.53	0.71	0.85	0.81	320
Boron Cadmium	mg/kg	9.6 0.56	11.3 0.7	0.34	11.2 0.41	1,900 38
Calcium	mg/kg mg/kg	441	459	731	1,160	NS
Chromium	mg/kg	18.1	19	19.8	20.4	190,0004
Cobalt	mg/kg	12	9.7	12.2	13.3	50
Copper	ma/ka	2.6	4.4	2.7	8.1	8,100
ran	ma/kg	32,800	35,100	36,000	38,300	150,000
ead	mg/kg	2.9	6.8	2.8	3.3	450
Magnesium	mg/kg	4,550	3,120	4,900	5,320	NS
Manganese	mg/kg	322	707	232	372	2,000
Molybdenum Nickel	mg/kg mg/kg	30.1	20.6	34.2	34.6	650 650
Potassium	mg/kg	1,790	1,810	2,100	2,090	NS
Selenium	mg/kg	0.42	0.43	10 (Cus)	- E - C 34	26
Silver	mg/kg	1.2	1.5	0.44	0.45	84
Sodium	mg/kg	NO 13/2	MC (384)	MD-14361	MC (037)	NS
Thallium	mg/kg	MO (1,2)	HEAT IS	NO (1 8)	ND (9.8)	14
/anadium	mg/kg	17.1	23.5	18.6	19.4	1,500
Zinc	mg/kg mg/kg	51.9	63.9	58.9	59.5	12,000 10
VOC Amilyses	mgmg	THE RESIDENCE OF THE PARTY OF T		TO SERVICE DE LA COLOR		
.1,1-Trichloroethane	mg/kg	VD /0,0055	HD 10.00631	VE (0.3084)	(080c.01 GM	20
1.1,2,2-Tetrachloroethane	mg/kg	ME 10 0055	ND (6,0083)	NE (0.0034	HD (0.0380)	0.08
1,1,2-Trichloroethane	mg/kg	MC (0 0055)	10.0083	NO (0.0084)	VD (0.0080)	0.5
,1-Dichloroethane	mg/kg	√C .0 0055'	ND (0,0063)	45 (0.0084)	MENO DOSS	3.1
1,1-Dichloroethene	ma/kg	NC (0.0066)	AID /0.06851	40 °C 2054 40 °C 0054	40 /0 0080) 10 00800	0.7 8.4
1,2,4-Trimethylbenzene 1,2-Dichlorobenzene	mg/kg mg/kg	MC (0 0055)	/E800.01 CM /E800.01 CM	ID (C 0054	MD 10 00801	60
1,2-Dichloroethane	mg/kg	NE 10 1055	ND (0.0063)	ND 10.008-1	ND 10 00801	0.5
(2-Dichloroethene (Total)	mg/kg	ND (0.0534)	ND (0.0 25)	WD/C.01281	MD 10 015")	75
2-Dichloropropane	mg/kg	NE (0.0055)	#D rd.00531	ND (0.0054)	₩D 10 0080,	0.5
1.3,5-Trimethylbenzene	mg/kg	(0.0055	MD 0.00501	WD #0 0054	NO 15 00801	2.3
1,3-Dichlorobenzane	mg/kg	4D /0 0055	ND '0.0083)	ME 10 0084	NE 70 50501	61
1,4-Dichlorobenzene	mg/kg	NO 10 00651	ND (0.0062)	145 10 00541	HC /C 30801	10
2-Butanone (MEK)	mg/kg	NO (0.0111)	0.152	MD (0.0128)	ND (0 0 81)	400
2-Hexanone 1-Methyl-2-pentanone (MIBK)	mg/kg mg/kg	ND 10 01 114 ND 10 01 111	4/0 (0,0125 4/0 (0,0125)	40 (0 0 28)	ND (0.016-1) ND (0.016-1	1.1
Acetone (WIBK)	ma/ka	0.0458	1.470	0.0431	0.159	3,300
Benzene	mg/kg	C 0055	ND (0.0083)	NO (0.0086)		0.5
Bromodichloromethane	mg/kg	*/D-(0.0055)	(C800.01G)4	ND 10.03841	NO (0 0080) NO (0 0080)	8
3romoform	mg/kg	NO 10 0055)	ND (0.0053)	HD 13,005-1	MO IC BOROLL	8
Bromomethane	mg/kg	WD 10 00651	MD (0.0063)	MD 15 00847	+D 10 0080) +D 10 0080)	1
Carbon disutfide	mg/kg	40 /0 S0861	HD (0.0083)	10 (G.0054)		150
Carbon tetrachloride	mg/kg	ND (0.0055)	HD (0,0083) HD (0,0063)	NO (0.0064)	ME (0.0080, MD (0.0080)	0.5 10
hlorobenzene			115 15 15 15 15 15 15 15 15 15 15 15 15	0.0000	12 - 5 (40.56 - 1	23
The same of the same	mg/kg mg/kg	ND (0.0055)	AID 10.00631	The Children		
Chloroethane	mg/kg mg/kg	ND (0 0065)	ND 10,00631	MD (0.0054)	+D =0.0050	8
Chloroethane Chloroform Chloromethane	mg/kg	ND (0 0055) NO (0 0055) NO (0 0055)	MD (5,0063)	MID /C 00841	MD 75 00501	3
Chloroethane Chloroform Chloromethane pis-1,2-Dichloroethene	mg/kg mg/kg mg/kg mg/kg	ND (0 0055) ND (0 0055) ND (0 0055) ND (0 0055)	HD (0,0063)	ND 70 00841 ND 70 00841	MD 75 00501	3 7
Chloroethane Chloroform Chloromethane is-1,2-Dichloroethene is-1,3-Dichloropropene	mg/kg mg/kg mg/kg mg/kg mg/kg	ND (0 0055) ND (0 0055) ND (0 0055) ND (0 0055) ND (0 0055)	HD (0.0062) HD (0.0063) ND (0.0063)	ND 10 0084) ND 10 00841 ND 10 00841	+CD (0.0050) (0.0060) (0.0060) (0.0060)	3 7 0.66
Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Dibromochloromethane	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	ND (0 0055) ND (0 0056) ND (0 0056) ND (0 0056) ND (0 0056)	MD (0.0063) MD (0.0063) MD (0.0063) MD (0.0063)	*C (0.0084) *E (0.0084) **D (0.0084) **C (0.0084)	+CD (0.0050) (0.0060) (0.0060) (0.0060)	3 7 0.66 8
Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Dibromochloromethane Chylbenzene	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	ND 10 0058 ND 10 0058 ND 10 0056 ND 10 0056 ND 10 0056 ND 10 0056 10 10 0056 10 16 0056	#ID (0.0603) #ID (0.063) (6.600.0) CM (6.600.0) GM (6.600.0) CM	+E /C 0054\ ₩E /G 0054 MD /C 00541 WC /G.0054 #IO / C 0064	MD (0 0080) MD (0 0080) MD (0 0080) MD (0 0080) MD (0 0080) MD (0 0080)	3 7 0.66 8 70
Chloroethane Chloroform Chloromethane ijs-1,2-Dichloroethene ijs-1,3-Dichloropropene Dichloromethane Ethylbenzene sopropylbenzene (Cumene)	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	ND 10 0058 ND 10 0058 ND 10 0058 ND 10 0058 ND 10 0058 ND 10 0058 10 10 0058 10 10 0058	MD (0,0060) MD (0,0063) MD (0,0063) MD (0,0063) MD (0,0063) MD (0,0663) MD (0,0063)	ND 70 0064) ND 75 0064) ND 10 0064) ND 10 0064 ND 10 0064 ND 70 0064	MD (0.0889) MD (0.0861) MD (0.0861) MD (0.0881) MD (0.0881) MD (0.0881) MD (0.0881) MD (0.0881) MD (0.0881)	3 7 0.66 8 70 680
Chloroethane Chloroform Chloromethane iis-1,2-Dichloroethene iis-1,3-Dichloropropene Dibromochloromethane Ethylbenzene Sopropylbenzene (Cumene) n&p-Xylene	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	ND 10 0058 ND 10 0058	HD (0.0563) HD (0.0563) HD (0.0563) HD (0.0563) HD (0.0563) HD (0.0563) HD (0.0725)	NC *C 0054) NE 75 00541 ND *C 00541 NC *G.0054 NC *G.0064 ND *C 01284	MD (0.0889) MD (0.0861) MD (0.0861) MD (0.0881) MD (0.0881) MD (0.0881) MD (0.0881) MD (0.0881) MD (0.0881)	3 7 0.66 8 70 680 1,000*
Chloroethane Chloroform Chloromethane iis-1,2-Dichloroethene iis-1,3-Dichloropropene Dibromochloromethane Chylbenzene Soprogylbenzene (Cumene) nab-Xylene Alethylene Chloride	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	ND 10 0058 ND 10 0058 ND 10 0058 ND 10 0058 ND 10 0058 ND 10 0058 10 10 0058 10 10 0058	HD 15 00631 HD 70,00631 HD 70,00631 HD 70,00631 HD 70,00631 HD 70,00631 HD 70,00631 HD 70,00631	ND 70 0064) ND 75 0064) ND 10 0064) ND 10 0064 ND 10 0064 ND 70 0064	MD (0 0080)	3 7 0.66 8 70 680
Chloroethane Chloroform Chloromethane is-1,2-Dichloroethene is-1,3-Dichloropropene Dibromochloromethane Chrybenzene Sopropylbenzene (Cumene) n&p-Xylene Jethylene Chloride Methyl-ter-butyl efther Japhthalene	mg/kg	ND (0.0065) ND (0.0065) ND (0.0065) ND (0.0066)	HD (0.0063) HD (0.0063) MD (0.0063) HD (0.0063) HD (0.0063) HD (0.0063) HD (0.0063) HD (0.0063) HD (0.0063) HD (0.0063) HD (0.0063)	MD / C 0064) MD / C 0064) MD / C 0064) MD / C 0064) MD / C 0064	HD (0.0080) HD (0.0080)	3 7 0.66 8 70 600 1,000 <sup>A</sup> 0.5 2
Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Cibromochloromethane Citylbenzene Sopropylbenzene (Cumene) m&p-Xylene Methylene Chloride Methylene Chloride Methylene Her NaphthaleneButylbenzene	mg/kg	NO 10 0085 NO 10 0085	HD (0.0063) HD (0.0063)	#ID 75 00541 MD 75 00541 MD 75 00541 IVC 70.0054 #ID 70.0054 #ID 70.00541 MD 70.00541 MD 70.00541 MD 70.00541 MD 70.00541 MD 70.00541	MD (0 0080)	3 7 0.66 8 70 600 1,000 <sup>h</sup> 0.5 2 25 950
Chloroethane Chloroform Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Chloromethane Chloromethane Chloromethane Chloromethane Chloromethane Chloromethane Chloromethane Chloromethane Methylene Chloride Methyl-tert-butyl ether Vaphthalene Chloromethane Chloromethane Methyl-tert-butyl ether Vaphthalene Chloromethane Chlorometha	mg/kg	NO 10 00551 NO 10 00551	HD (5,0063) HD (5,063) MD (6,063) MD (6,063)	#ID 70 0084) #ID 70 0084) #ID 70 0084) #ID 70 0084) #ID 70 0084	HD 70 0080 HD 70 0080	3 7 0.66 8 70 660 1,000 <sup>6</sup> 0.5 2 25 950
Chloroethane Chloroform Chloroform Chloromethane sis-1,2-Dichloroethene sis-1,3-Dichloropropene Dity-Dichloropropene Dity-Dichloropropene Citylbenzene sopropylbenzene (Cumene) m&p-Xylene Wethylene Chloride Methyl-tent-butyl ether Naphthalene -Butylbenzene D-Xylene D-Xylene	mg/kg	NO 10 00551 NO 10 00551	HD (2,0062) HD (0,0063)	*IC *C 0084) ND *C 0084) MD *C 0084) ivC *C.0084 *ID *C.0084	HD 70 00801 HD 70 00801 HD 70 00801 ND 70 00801 HD 70 00801	3 7 0.66 8 70 600 1,000 <sup>a</sup> 0.5 2 25 950 290 1,000 <sup>5</sup>
Chloroethane Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Cibromochioromethane Citylbenzene Sopropybenzene (Cumene) m&c-Xylene Wethylene Chloride Wethyl-ten-butyl ether Valphtnalene n-ButylbenzenePropylbenzeneSyleneSyleneSylene	mg/kg	NO 10 0055 NO 10 0055	HD 75,05631 HD 75,05631	*IC *C 0084) *NO 15 0054) *NO 15 0054) *NO 15 0054 *NO 15 00564	HD (0.0080)	3 7 0.66 8 70 600 1,000 <sup>6</sup> 0.5 2 25 950 290 1,000 <sup>8</sup> NS
Chloroethane Chloroform Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Chloromochloromethane Chlylbenzene Sooropylbenzene (Cumene) map-Xylene Methylene Chloride Methyl-lent-butyl either MaghthaleneButylbenzenePutylbenzenePopylbenzeneSyleneSopropyltolueneSe-Sulylbenzene	mg/kg	NO 10 00551 NO 10 00551 NO 10 30561 NO 10 30561 NO 10 00561 NO 10 00561	HD (5,0563) HD (5,0663) HD (5,0663) HD (5,0663) HD (5,0663) HD (6,0663) HD (6,0663) HD (6,0663) HD (7,0663) HD (7,0663) HD (7,0663) HD (7,0663) HD (7,0663) HD (7,0663)	#ID 70 0084) #ID 70 0084) #ID 70 0084) #ID 70 0084	HD 70 0080 HD 70 0080	3 7 0.66 8 70 600 1,000 <sup>6</sup> 0.5 2 25 950 290 1,000 <sup>8</sup> NS 350
Chloroethane Chloroform Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Chloromethane Methylene Chloride Methyl-ten-butyl ether Vaphthalene -Butylbenzene Chloromethane Chloro	mg/kg	NO 70 00551	HD (2,0062) HD (0,0063)	#ID 75 00541 ND 75 00541 MD 75 00541 INC 75.0054 HD 75.0054 HD 75.0054 HD 75.0054 MD 75.0054	HD 70 00801 HD 70 00801 HD 70 00801 ND 70 00801 HD 70 00801	3 7 0.66 8 70 600 1,000 <sup>a</sup> 0.5 2 25 950 290 1,000 <sup>5</sup> NS 350 24
Chloroethane Chloroform Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Cilibromochloropropene Cilibromochloromethane Cilibromochloromethane Cilibromochloromethane Cilibromochloromethane Chloromethane Chloromethane Map-Xylene Methyl-lent-butyl ether Maphthalene 1-Butylbenzene 1-Broylbenzene 1-Broylbenzene 1-BroylbenzeneSyleneIsopropyltoluene sec-Butylbenzene Styrene Cetrachloroethene	mg/kg	NO 10 0055 NO 10 0055	HD (5,0563) HD (5,0663) HD (5,0663) HD (5,0663) HD (5,0663) HD (6,0663) HD (6,0663) HD (6,0663) HD (7,0663) HD (7,0663) HD (7,0663) HD (7,0663) HD (7,0663) HD (7,0663)	**C	HD 70 00809	3 7 0.66 8 70 600 1,000 <sup>6</sup> 0.5 2 25 950 290 1,000 <sup>8</sup> NS 350 24 0.5
Chloroethane Chloroform Chloroform Chloromethane pis-1,2-Dichloroethene pis-1,2-Dichloroethene pis-1,2-Dichloroethene pis-1,2-Dichloropropene Chloromochloromethane Ethylbenzene sopropybenzene (Cumene) map-Xylene Methyl-len-butyl either Maphthalene n-Butylbenzene n-Bropylbenzene n-Propylbenzene n-Propylbenzene pis-Spropyltoluene pis-Butylbenzene	mg/kg	NO 70 00551	HD (5,0563) HD (5,0563) HD (5,0563) HD (5,0563) HD (5,0563) HD (5,0563) HD (6,0563) HD (6,0563) HD (7,0563)	#ID 75 00541 ND 75 00541 MD 75 00541 INC 75.0054 #ID 75.0054 #ID 75.0054 MD 75.0054	HD 70 00801 HD 70 00801 HD 70 00801 ND 70 00801 HD 70 00801	3 7 0.66 8 70 600 1,000 <sup>a</sup> 0.5 2 25 950 290 1,000 <sup>5</sup> NS 350 24
Chloroethane Chloroform Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Dibromochloropropene Citylbenzene Sopropylbenzene (Cumene) mapXylene Methyl-len-butyl ether Maphthalene 1-Brutylbenzene 1-Brutylbenzene 1-Bropylbenzene 2-Sylene 2-Sylene 2-Sylene 2-Isopropyltoluene 2-Stuyfbenzene 1-Brutylbenzene 1-Brutylbenzene 1-Brutylbenzene 1-Brutylbenzene 1-Brutylbenzene 1-Bropropyltoluene 1-Brutylbenzene 1-Gluene Tottal BTEX Trans-1,2-Dichloroethene	mg/kg	ND 10 00551 ND 10 00551 ND 10 00555 ND 10 00555 ND 10 00555 ND 10 00556	HD (5,0563) HD (5,0563) HD (5,0563) HD (5,0563) HD (3,0563) HD (5,0563) HD (6,0563) HD (70,0563)	*IC *C 0084) *NO 10 0086) *NO 10 0086)	HD 70 00801 HD 70 00801	3 7 0.66 8 70 600 1,000 <sup>6</sup> 0.5 2 25 950 290 1,000 <sup>8</sup> NS 350 24 0.5
Chloroethane Chloroform Chloroform Chloroform Chloromethane cis-1,2-Dichloroethene cis-1,3-Dichloropropene Ditromochloromethane Chlylbenzene Sooropylbenzene (Cumene) m&p-Xylene Methylene Chloride Methyl-lent-butyl either Naphthalene n-Butylbenzene n-Propylbenzene chlylbenzene chlybenzene chlylbenzene chlylbenzene chlylbenzene chlylbenzene chlybenzene chlylbenzene chlylbenzene chlylbenzene chlylbenzene chlybenzene c	mg/kg	NO 10 0055	HD (5,0563) HD (5,0663) HD (5,0663) HD (5,0663) HD (5,0663) HD (6,0663)	NO 70 00841	#D 76 0080 #D 76	3 7 0.66 8 70 600 1,000 <sup>6</sup> 0.5 2 25 950 290 1,000 <sup>8</sup> NS 350 24 0.5 100 NS
Chlorobenzene Chloroethane Chloroethane Chloromethane Sis-1,2-Dichloroethene Sis-1,3-Dichloropropene Chloromethane Sis-1,3-Dichloropropene Chloromethane Columne C	mg/kg	ND 10 00551 ND 10 00551 ND 10 00555 ND 10 00555 ND 10 00555 ND 10 00556	HD (5,0563) HD (5,0563) HD (5,0563) HD (5,0563) HD (3,0563) HD (5,0563) HD (6,0563) HD (70,0563)	*IC *C 0084) *NO 10 0086) *NO 10 0086)	HD 70 00801 HD 70 00801	3 7 0.66 8 70 600 1,000 <sup>6</sup> 0.5 2 25 950 290 1,000 <sup>8</sup> NS 350 24 0.5

## Table 4.5-1 Analytical Results for Soil (Borehole Locations) Ely 1H/5H/7H SE Wellsite

## Dimock, Township Susquehana County, PA

Sample Identification		ELY-5-B1	ELY-5-B2	ELY-5-B3	ELY-5-B4	SOIL Residential Use Aquifer MSCs <sup>1</sup>
Sample Date	Units	5/25/2010	5/25/2010	5/25/2010	5/25/2010	
SVOC Analyses	Marine Co.	THE RESERVE	NAME OF STREET	COMMON STATE	STATE OF THE PARTY	ALEXANDER DE LA CASA
,2,4-Trichiorobenzene	mg/kg	MD (E 347)	ND (0.402)	AD100741	ND 10 358	27
,2-Dichlorobenzene	mg/kg	ND /0 3=7	40.10.403)	NO 16 374	ND (6 358)	60
,3-Dichlorobenzene	mg/kg	NE 10.3471	VD (0 402)	ND 10 3741	NO 49 356	61
,4-Dichlorobenzene	mg/kg	RD (0.3(7)	VD -C 402	= D (0 274)	HE (0.368)	10
,4,5-Trichlorophenol	ma/kg	₩C+3.857	WD (1 000)	NO (0 935)	MD 12 880	2,300
,4,6-Trichlorophenol	mg/kg	AC (0.3×7)	NO (0 402)	ND (0.274)	NO 10 3599	11
,4-Dichlorophenol ,4-Dimethylphenol	mg/kg	MD (6.347)	MD (0 403)	MD/6374	HC 10 356) HC 10 366)	73
,4-Dinitrophenal	mg/kg mg/kg	ND 10 3471	400 (0 402) 400 (1 000)	HD (0.274) HD (0.235)	YD (0 850)	7.3
,4-Dinitrototuene	mg/kg	KO (G 347)	HIC (0.402)	AD 10 3743	NO (C.385)	0.21
6-Dinitrotoluene	ma/ka	ND 10 347.	WE /0 402	IC 10 372	14D-13 3661	3.7
-Chloronaphthalene	mg/kg	ND 10 3471	NO 10 402	ND (0.37/L	(868 C) SA	6,200
-Chlorophenal	mg/kg	ND 2367	NO:10.402	ND-0.3761	((D)(0.355)	4.4
-Methylnaphthalene	mg/kg	ND-10 3471	(NC 10.40%)	-VI (0.374)	(4D (C 355)	600
-Methylphenol(o-Cresol)	mg/kg	PE-15.347	NO 70 402:	AIC (0.574)	VO (C 356)	180
-Nitroanlline	ma/ka	同じ版が	ME 15 0001	MD /5 925	ME (C 889)	31
Nitrophenol	mg/kg	MD/6-347	MO10 405	MD 15 3741	WD 75.358,	29
&4-Methylphenol(m&p Cresol)	mg/kg	ND 10,393	1.43	NO 19 7471	HD (0.752)	187
,3'-Dichlorobenzidine	mg/kg	AD (0.347)	H015 1021	10 70 374	(4D (0.565)	8.3
-Nitroaniline	mg/kg	mD (0.887	1,0 (* 000)	WD 45 635	ME 10.8901	1.1
,6-Dinitro-2-methylphenol	mg/kg	HD (0.867)	WD #1 0001	MD (0.835	WC (0 890)	0.37
-Sromophenylphenyl ether	mg/kg	MC (0.367)	HIE RO MOS	NO 10 0741	MD (C.358)	NS 37
-Chloro-3-methylphenol -Chloroaniline	mg/kg mg/kg	ME (0.347)	#5 (€ ±02) #5 (€ ±02)	AD (0.374)	MD (0.366)	0.42
-Chlorophenylphenyl ether	ma/kg	MC (0.3=71	NE 16 402	VD (0.374)	N2 (0.353)	NS NS
-Nitroaniline	mg/kg	HD /C 887+	ND 1000	10 0 936	#3 /5 850	3.3
-Nitrophenol	mg/kg	ND 10 3471	NO (0.402)	NC (0.374)	NO (0.358)	6
cenaphthene	mg/ka	N.D.(0.347)	%D (0.402)	ND 6 2741	W2 (0.395)	2,700
cenaphthylene	mg/kg	HC (0 3c7)	NO (00#02)	NC 10 3741	MC-fg.366)	2,500
nthracene	mg/kg	ND (0.541)	NO (6.402)	ND (0.374)	NE 10.355	350
Senzo(a)anthracene	mg/kg	HD (0.347)	NO (0.403)	JD (0 374*	#D (0.380)	5.7
enzo(a)pyrene	ma/ka	340 (3.3/17)	WE (0.402)	NO ICOR	#C 10,3881	0.57
lenzo(b)fluoranthene	mg/kg	MD-70-3471	AC (0 402)	NO (6.37#)	HE (0.358)	5.7
lenzo(g,h,i)perylene	mg/kg	PED (0.307)	45 (0:402)	ND (DOTE)	ND (0.355)	180
Benzo(k)fluoranthene	mg/kg	HD (D 597)	NO 10 4021	HD (0.374	AC (0.355)	57
Benzyl alcohol	mg/kg	HD (5.567)	HE 10 4021	MC 10 376	PD (0.35S)	1,800
is(2-Chloroethoxy)methane	ma/ka	RD (0.347	NO 10 ×021	40 to 334	NE (0.358)	11
is(2-Chloroethyl) ether	mg/kg	ND (0.347)	ND (0 ±02)	ND (0 374)	A2 (0.365)	0.015
vis(2-Chloroisopropyl) ether vis(2-Ethylhexyl)phthalate	mg/kg	ND (0.347)	MD (0.402)	VD (0.374)	NO (0.388)	30 130
Sutylberrzylphthalate	mg/kg mg/kg	ND (0 347)	W016 402	HD (0.074)	4D (0.366)	3,000
Chrysene	mg/kg	MD (0.347)	NO 10 4021	-C (0.372	NO 10,3681	230
Dibenz(a,h)anthracene	mg/kg	ND 18.3471	ND 10 (02)	40 (D.374)	NO (0.368)	0.57
Dibenzofuran	mg/kg	MD (0 3(7)	RD (0 402)	NO (0.374)	ND (0.386)	95
Diethylphthalate	mg/kg	HD (0.347)	ND (0.402)	MD (0.374)	4D (0.336	2,900
imethylphthalate	mg/kg	MS (0.347)	NE (0.402)	4010376:		NS
i-n-butylphthalate	mg/kg	HC (0.367)	PD (0 402)	NO (0.374)	ND (0.366) ND (0.366)	1500
i-n-octylphthalate	mg/kg	ND (0.367)	ND 10 4021	VD (C. 372)	MD (0 356)	8,800
luoranthene	ma/kg	ND 10 3471	(\$04.01 CH	M2 (0 374)	WD (0.3561	3,200
luorene	mg/kg	ND (0.3≥7)	VD (0.402)	ND (0:374)	NO (0.356)	3,000
exachloro-1,3-butadiene	mg/kg	HD 10,347	NO (0.402)	ND 103741	NO (0.355)	10
exachlorobenzene	mg/kg	VD (0.347)	ND (0.402)	VD 10 3741	NO (0.365)	0.96
exachlorocyclopentadiene exachloroethane	mo/kg	MD (0.347)	NO (0 402)	VD (0.374)	ND (0.356)	91 0.56
deno(1,2,3-cd)pyrene	ma/kg	MD (0.347)	NO 10 4021	NE 10 3741	ND (0.366)	5.7
ophorone	mg/kg mg/kg	NO (0.347)	MD 40 4021	WD (0 374)	MD (0.356)	10
laphthalene	mg/kg mg/kg	#ID 13 3471	ND 10 4021	ND /Q 374	MD (0.355)	25
ltrobenzene	ma/ka	MD (0.347)	ND 10 4021	VE (0.376)	ND (0.355)	7.3
-Nitroso-di-n-propylamine	mg/kg	ND (0 3AT)	NO 10 €021	Jeto 70:3741	ND (0.355)	0.0094
-Nitrosodiphenylamine	mg/kg	NE (0:347)	ND (0.402)	MD-10 3741	ND (0,356)	20
entachlorophenol	mg/kg	NO (0.857)	ND (1000)	MD 10 9351	MD (0.690)	5
henanthrene	mg/kg	HD (0.347)	NO /8 402)	NC (0.57a)	WD (0.356)	10,000
henal	mg/kg	10 10 3471	ND (0.402)	MD (0.372)	7 D 10,3861	200
yrene	mg/kg	WD (0.347)	ND 10 4021	ND 10 374	WD (0.358)	2,200

Page 2 ar 2

Notes:

1 = Medium-Specific Concentrations (MSCs) were established from the Residential, Used Aquifer with TDS < 2500 MSCs Soil to Groundwater Numeric Values listed in Appendix A, Table 3 and Table 4 of 25 PA Code Section 250 Administration of the Land Recycling Act (Act 2) regulations.

2 = ND (3 0) = Parameter not detected at the detection limit specified in parentheses.

3 = No Standard

4 = as Chromium III.

5 = as cis-1, 2 - Dichloroethlene

8 = as Total xylenes.

7 = as n-Cresol

<sup>7=</sup>as p-Cresol

# Table 4.5-2 Analytical Results for Soil (Test Pit Locations) Ely 1H/5H/7H SE Wellsite

Dimock Township Susquehanna County, PA

						,,					
Sample Identification Sample Da	te	<b>Ely-5-P1A</b> 5/27/2010	<b>Ely-5-P1B</b> 5/27/2010	<b>Ely-5-P2A</b> 5/26/2010	<b>Ely-5-P2B</b> 5/27/2010	Ely-5-P2C 5/27/2010	<b>Ely-5-P3A</b> 5/27/2010	Ely-5-P3B 5/27/2010	<b>Ely-5-P4A</b> 5/27/2010	Ely-5-P4B 5/27/2010	SOIL Residential Used Aquifer MSCs <sup>1</sup>
Parameter General Chemistry Analyses	Units			ADDRESS STEEL	CONTRACT PARTY	With the book as Bi					Aquiter Wiscs
	1 %	7.5	0.0	40.5	7.0	0.0	7.4	0.5	0.52	5.8	wa3
Percent Moisture (%)	70	7.5	6.0	10.5	7.9	9.3	7.1	8.5	0.52	5.0	NS <sup>3</sup>
VOCs (8260)	The United		The state of the state of	Appendix to the							SUCCESS TO SE
Benzene	mg/kg	ND (0.0075) <sup>2</sup>	ND (0.0087)	ND (0.0044)	ND (0.0045)	ND (0.0050)	ND (0.0065)	(860C.0) QM	ND (0.0072)	ND (0.0060)	0.5
Ethylbenzene	mg/kg	ND (0.0075)	ND (0.0087)	ND (0.0044)	ND (0.0045)	ND (0,0050)	ND (0.3085)	(8600.0) CM	ND (0.0072)	ND (0.0080)	70
Isopropylbenzene (Cumene)	mg/kg	ND (0.0075)	ND (0.0087)	ND (0.0044)	ND (0.0045)	ND (0.0050)	ND (0.0065)	(8806.0) GK	ND (0.0072)	ND (0.0080)	600
Methyl-tert-butyl ether	mg/kg	ND (0.0075)	(T860,0) G/A	ND (0.0044)	ND (0.0045)	ND (0.0050)	ND (0.0085)	ND (0.0088)	NE) (0.0072)	ND (0.0080)	2
Naphthalene	mg/kg	ND (0.0075)	ND (0.0087)	ND (0.0044)	ND (0.0645)	ND (0.0050)	ND (0.0065)	ND (0.0068)	ND (0.0072)	ND (0.0060)	25
Toluene	mg/kg		ND (0,0087)	ND (0.0044)	ND (0.0045)	ND (0.0050)	(5600.0) GK	ND (0.0068)	ND (0.0072)	(0800.0) CM	100
1,2,4-Trimethylbenzene	mg/kg		ND (0.0087)	ND (0.0044)	ND (0.0045)	ND (0.6050)	ND (0.0065)	(8600.0) CM	ND (0.0072)	(0.0080) CM	8.4
1,3,5-Trimethylbenzene	mg/kg	ND (0.0075)	ND (0.0087)	MD (0.0044)	ND (0.0045)	ND (0.0050)	ND (0.0083)	ND (0.0068)	ND (0.0072)	NED (0.0050)	2.3

Notes:
All results in milligram per kilogram (mg/kg) unless otherwise stated.

1 = Medium-Specific Concentrations (MSCs) were established from the Residential, Used Aquifer with TDS < 2500 MSCs Soil to Groundwater Numeric Values listed in Appendix A, Table 3 and Table 4 of 25 PA Code Section 250, Administration of the Land Recycling Act (Act 2) regulations.

2 = ND (0.0075) = Parameter not detected at the detection limit specified in parentheses.

3 = No Standard

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#### Table 4.6-1 Analytical Results for Soil Ely 2 Wellsite

Sample Identification		ELY-2-B1	ELY-2-B2	SOIL Residential Used Aquifer			
Sample Date	I laita	5/25/2010	5/25/2010	MSCs <sup>1</sup>			
Parameter General Chemistry Analyses	Units	New York Control of the Park	Livosila Section La	Contract of the second			
Percent Moisture (ASTM D2974-87)	%	10.1	8.8	l NS <sup>3</sup>			
Nitrogen, Ammonia (EPA 350.1)	mg/kg	11,3	5.5	1,900			
Chloride (SM 4500-CI-E)	mg/L	40 (3.0)*	NO 73.01	NS			
Surfactants (MBAS, SM 5540C)	mg/L	(20.00)	NO (0:10)	NS			
Ethylene Glycol (EPA 8015)	mg/kg	MD (10 0)	1.0 (10.0)	1,400			
Metals Analyses (6010B/7471)				是是开始,但是是			
Aluminum	mg/kg	15,500	13,200	190,000			
Antimony	mg/kg	ND (0,44)	NO (0,44)	27			
Arsenic	mg/kg	19.6	15.4	12			
Barium_	mg/kg	75.9	71.7	8,200			
Beryllium	mg/kg	0.79	0.72	320 1900			
Boron Cadmium	mg/kg mg/kg	9,1 0,63	7.9 0.43	38			
Calcium	mg/kg	1,860	1,490	NS NS			
Chromium	mg/kg	17.6	15.1	190,000			
Cobalt	mg/kg	14.2	12	50			
Copper	mg/kg	13.8	11.1	8,100			
Iron	mg/kg	32,700	26,200	150,000			
Lead	mg/kg	28.2	20.9	450			
Magnesium	mg/kg	5,720	4,750	NS			
Manganese	mg/kg	1,490	1,670	2,000			
Molybdenum	mg/kg	ND (5.8)	NO (1,7)	650			
Nickel Nickel	mg/kg	26.4	23.5	650			
otassium	mg/kg	1,920	1,900	NS			
Selenium	mg/kg	0.58	N5 (0,44)	26			
Silver	mg/kg	0.33	0.26	84			
Sodium	mg/kg	ND (442)	ND (435)	NS			
Thallium	mg/kg	ND (1.8)	ND (1,7)	14			
Vanadium	mg/kg	17.1	14.3	1,500			
Zinc	mg/kg	95.1 NO (6,11)	72 ND (0.111	12,000 10			
Mercury VOC Analyses (8260)	mg/kg	122 (0, 1)	Mar Park 1.11	THE PARTY OF THE PARTY OF			
1.1.1-Trichloroethane	mg/kg	VD /0.00421	ND (0.0080)	20			
1,1,2,2-Tetrachloroethane	mg/kg	ND (0.0042)	ND (0 0080)	0.08			
1,1,2-Trichloroethane	mg/kg	MD (0.0042)	ND (0.5080)	0.5			
1,1-Dichloroethane	mg/kg	ND (0.0042)	ND (0.0080)	3.1			
1,1-Dichloroethene	mg/kg	MD (0.0042)	ME (0,0030)	0.7			
1,2,4-Trimethylbenzene	mg/kg	MD (0.0042)	ND (0.0080)	8.4			
1,2-Dichlorobenzene	mg/kg	ND (0.0042)	MD (0.0080)	60			
1,2-Dichloroethane	mg/kg	ND (0.0042)	(C80C C) CIN	0.5			
1,2-Dichloroethene (Total)	mg/kg	ND 10,0084	NE (0.0160)	7°			
1,2-Dichloropropane	mg/kg	ND (0.0042)	/68C0.0) CM	0.5			
1,3,5-Trimethylbenzene	mg/kg	ND (0.0042)	ND (0.0080)	2.3			
1,3-Dichlorobenzene	mg/kg	ND (0.0042)	ND (0.00801	61			
1,4-Dichlorobenzene	mg/kg	NO (0.0042)	ND (0.0080)	10			
2-Butanone (MEK)	mg/kg	ND (0.0084)	0.0293	400			
2-Hexanone	mg/kg	ND (0.0004)	ND (0.0160)	1.1			
4-Methyl-2-pentanone (MIBK)	mg/kg mg/kg	0.0365	KD (0.0180)	290 3,300			
Acetone Benzene	mg/kg	MD (9.00<2)	ND 10 00801	0.5			
Bromodichloromethane	mg/kg	ND (0.0042)	MD (0.0080)	8			
Bromoform	mg/kg	ND (0.0042)	10300.03 CH	8			
Bromomethane	mg/kg	ND (0.0042)	HD (0.00801	1			
Carbon disulfide	mg/kg	ND (0.0042)	VD (0.0000)	150			
Carbon tetrachloride	mg/kg	NO (0 0042)	ND (0.0080)	0.5			
Chlorobenzene	mg/kg	ND (0.0042)	MD (0.0080)	10			
Chloroethane	mg/kg	ND (0.0042)	ND (0.0080)	23			
	mg/kg	ND (0.0042)	ND (0,0080)	- 8			
Chloroform							
	mg/kg	ND (0.0042)	NIC 10.00801	3			
Chloromethane		ND (0.0042) ND (0.0042)	ND (0.2080) 138C0,0) GM	7			
Chloroform Chloromethane cls-1,2-Dichloroethene cls-1,3-Dichloropropene	mg/kg						

### Table 4.6-1 Analytical Results for Soil Ely 2 Wellsite

Sample Identification	n	ELY-2-B1	ELY-2-B2	SOIL Residential Used Aquifer		
Sample Da Parameter	te Units	5/25/2010	5/25/2010	MSCs <sup>1</sup>		
VOC Analyses (8260)	Onics	THE REPORT OF THE PARTY OF	AND DESCRIPTION OF THE PARTY OF			
Ethylbenzene	mg/kg	NO (0,0042)	MD (070090)	70		
Isopropylbenzene (Cumene)	mg/kg	HE 10,0042)	ND (0.0080)	600		
m&p-Xylene	mg/kg	(AB00.01 CX	AD (0.0460)	1,000°		
Methylene Chloride	mg/kg	NO (0.0042)	ND (0:0080)	0.5		
Methyl-tert-butyl ether	mg/kg	ND (0.00×2)	ND (0.00861	2		
Naphthalene	mg/kg	MD (0.0042)	ND (0.0080)	25		
n-Bulylbenzene	mg/kg	ND (0.0042)	(0.0080) aw	950		
n-Propylbenzene	mg/kg	ND (0.0042)	(0.0080) QW	290		
o-Xylene	mg/kg	ND (0.0042)	ND (C.DCBC)	1,000°		
p-Isopropyltoluene	mg/kg	HD (0.0042)	ND (0.0080)	NS		
sec-Butylbenzene	mg/kg	ND (0.0042)	MD (0.0686)	350		
Styrene	mg/kg	AID (0.0042)	MD (0.0080)	24		
Tetrachloroethene	mg/kg	ND (0.0042)	(0800 <u>.018</u>	0.5		
Toluene	mg/kg	MD (0.0042)	MD (0.0080)	100 NS		
TOTAL BTEX Irans-1,2-Dichloroethene	mg/kg	ND (0.0252) ND (0.0942)	NO (0.0478) NO (0.0088)	10		
trans-1,2-Dichloroethene	mg/kg mg/kg	WT (0.0042)	(0800.0) CM	0.66		
Trichloroethene	mg/kg mg/kg	MD (0.0042)	VC (0.0080)	0.5		
Vinyl chloride	mg/kg	ND (0.0042)	ND (0.0080)	0.3		
Xylene (Total)	mg/kg	MD 10 01261	ND 10.02401	1,000		
SVOC Analyses (8270)	mgmg		AND THE REAL PROPERTY.	MARCHIAN CHICANOLOGICA		
1,2,4-Trichlorobenzene	mg/kg	NC. (0.381)	ND (0.362)	27		
1,2-Dichlorobenzene	mg/kg	140 (0.361)	ME (0.362)	60		
1,3-Dichlorobenzene	mg/kg	ND (0.381)	ND (0.362)	61		
1.4-Dichlorobenzene	mg/kg	NO (0.361)	ND (0.362)	10		
2,4,5-Trichlorophenol	mg/kg	(408,0) CM	ND (0.907)	2,300		
2.4.6-Trichlorophenol	mg/kg	ND (0.381)	NO (0.962)	11		
2.4-Dichlorophenal	mg/kg	ND (0.381)	ND (0.362)	2		
2.4-Dimethylphenol	mg/kg	ID (0.33:)	(4D (0.362)	73		
2,4-Dinitrophenol	mg/kg	ND (0.904)	ND (0.907)	7.3		
2,4-Dinitrotoluene	mg/kg	ND (0.381)	HD (0.232)	0.21		
2,6-Dinitrotoluene	mg/kg	NO (0.381)	ND (0.352)	3.7		
2-Chloronaphthalene	mg/kg	4D (0.361)	MD (0.862)	6,200		
2-Chlorophenol	mg/kg	MED (QL361)	MD (0.382)	4.4		
2-Methylnaphthalene	mg/kg	ND (0.381)	123E 01 CIN	600		
2-Methylphenol(o-Cresol)	mg/kg	ND (0.351)	ND (0.362)	180		
2-Nitroaniline	mg/kg	HD (0,904)	ND (0.907)	11		
2-Nitrophenol	mg/kg	MD (0.361)	ND (0.382)	29		
3&4-Methylphenol(m&p Cresol)	mg/kg	NO (0,723)	MD (0.72E)	18'		
3,3'-Dichlorobenzidine	mg/kg	HO (0.361)	HD (0.532)	8.3		
3-Nitroaniline	mg/kg	ND (0.904)	(708.0) CM	1.1		
4.6-Dinitro-2-methylphenal	mg/kg	ND (0.904)	ND (0.907)	0.37		
4-Bromophenylphenyl ether	mg/kg	MD (0.361)	NO (0.332)	NS NS		
4-Chloro-3-methylphenol	mg/kg	(ID (0.391)	ND (0.362)	37		
4-Chloroaniline	mg/kg	ND (0.351)	ND (0.362)	0.42		
4-Chlorophenylphenyl ether	mg/kg	ND (0.351)	ND (0.362) ND (0.807)	NS 3.3		
4-Nitroaniline	mg/kg	(408.0) DK (188.0) GK		3.3		
4-Nitrophenol	mg/kg		MD (0.382)			
Acceptable	mg/kg	MD (0.361)	(4D (0.362)	2,700 2,500		
Acenaphthylene Anthracene	mg/kg ma/kg	ND (0.361)	ND (0.382)	350		
Aninracene Benzo(a)anthracene	mg/kg	ND (0.361)	ND (0.362)	5.7		
Benzo(a)pyrene	mg/kg	KD (0.361)	ND (0.362)	0.57		
Benzo(b)fluoranthene	mg/kg	ND (0.361)	MD (0.362)	5.7		
Benzo(g,h,i)perylene	mg/kg	VD (0.361)	NO (6.382)	180		
Benzo(k)fluoranthene	mg/kg	ND (0.361)	ND (0.382)	57		
Benzyl alcohol	mg/kg	NO (0.361)	ND (0.362)	1,800		
bis(2-Chloroethoxy)methane	mg/kg	ND (0.361)	ND (0.362)	11		
bis(2-Chloroethyl) ether	mg/kg	HD (0.361)	ND (0.362)	0.015		
bis(2-Chloroisopropyl) ether	mg/kg	MZ (0,361)	MD (0.362)	30		
bis(2-Ethylhexyl)phthalate	mg/kg	ND (0.361)	NO 10.362)	130		
Butylbenzylphthalate	mg/kg	NO (0,381)	HD (0.382)	3,000		

#### Table 4.6-1 **Analytical Results for Soil** Ely 2 Wellsite

Dimock, Township Susquehana County, PA

Sample Identification Sample Date		ELY-2-B1 5/25/2010	ELY-2-B2 5/25/2010	SOIL Residential Used Aquifer MSCs <sup>1</sup>
Parameter SVOC Analyses (8270)	Units	NAME OF TAXABLE PARTY.	THE PERSON NAMED IN	The second second second
	ng/kg T	ND (0.361)	HD (0.352)	230
	ng/kg	ND (0.351)	ND (0.382)	0.57
	ng/kg	ND (0.361)	(4D (0.382)	95
	ng/kg	ND (0.361)	ND (0.362)	2,900
	ng/kg	ND (0.331)	MD (0.362)	NS
	ng/kg	ND (0.361)	NO (0 362)	1500
	ng/kg	AID (0,351)	ND (0.362)	8,800
	ng/kg	ND (0.361)	ND (0.352)	3,200
	ng/kg	ND (0.36%)	ND (3.382)	3,000
	ng/kg	MD (0.3641	MD (0.362)	10
	ng/kg	ND (0.361)	VC (0.382)	0.96
	ng/kg	ND (0.361)	ND (0.362)	91
	ng/kg	HD (0.351)	ND (0.392)	0.56
	ng/kg	MD (0.361)	ME (3.362)	5.7
Isophorone	ng/kg	ND (0.351)	IVEX (0.382)	10
	ng/kg	ND (0.351)	ND (0.362)	25
Nitrobenzene	ng/kg	ND (0.361)	NO (0.862)	7.3
N-Nitroso-di-n-propylamine n	mg/kg	ND (0.361)	ND (0.862)	0.0094
N-Nitrosodiphenylamine n	ng/kg	WD (0.381)	NC (0,362)	20
Pentachlorophenol n	ng/kg	ND (0.904)	ND (0.307)	5
Phenanthrene	ng/kg	HD (0.381)	MD (0.362)	10,000
Phenol	ng/kg	ND (0.361)	ND (0.362)	200
Pyrene n	ng/kg	ND (0.361)	ND (0.362)	2,200

=Result exceeds SHS Residential, Used Aquifer MSC 19.6

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Notes:

1 = Medium-Specific Concentrations (MSCs) were established from the Residential, Used Agulfer with TDS < 2500 MSCs Soll to Groundwater Numeric Values listed in Appendix A, Table 3 and Table 4 of 25 PA Code Section 250 Administration of the Land Recycling Act (Act 2) regulations.

2 = ND (3.0) = Parameter not detected at the detection limit specified in parentheses.

3 = No Standard

4 = as Chromium III.

3 = as cis-1, 2 - Dichloroethlene

5 = as Total xylenes.

(-as p-Cresol

<sup>&#</sup>x27;=as p-Cresol

Sample Identification		ELY #2 A	ELY#2 B	Surface Water Quality Criteria <sup>1</sup>					
Sample Location Sample Date Parameter		<i>Upgradient</i> 12/8/2009	Downgradient 12/8/2009	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria			
General Chemistry	OM SECTION	SHEET WATER		THE PERSON NAMED IN	CONTRACTOR OF STREET				
Acklity, Total (SM 2310B)	mg/L	ND (10.012	ND (10.ft)	NS <sup>3</sup>	NS	NS			
Alkalinity, Total as CaCO3 (SM 2320B)	mg/L	NO (10,0)	12.5	NS	NS	NS			
Nitrogen, Ammonia (EPA 350.1)	mg/L	HD (0.10)	ND (0 10)	NS	NS	NS			
Chloride (SM 4500-CI-E)	mg/L	66	28.7	NS	NS	250 NS			
Surfactants (MBAS, SM 5540C) pH (SM 4500-H+B)	mg/L Std. Units	MD (0.10) 6.4	ND (0,10)	NS	-9.0	NS			
Total Dissolved Solids (SM 2540C)	mg/L	230	6.6 97	NS 8.0	NS NS	750			
Diesel Components (DRO, EPA 8015B Mod)	mg/L	NO (0.13)	HD (0.10)	NS NS	NS	NS			
TPH (C06-C10) (GRO, EPA 8015B Mod)	ug/L	ND (200)	MD (2001	NS	NS	NS			
Total Petroleum Hydrocarbons (EPA 1664A)	mg/L	MD (4.8)	ND (4,9)	NS	NS	NS			
Total Metals Analyses (60108/7471)		AND DESCRIPTION	eteriko di	THE RESERVE OF THE	A SALA SE MAN CONT.	SALUE AND LINE			
Aluminum	ug/L	107	3,110	NS	750	NS			
Antimony	ug/L	NO (5.0)	ND (5.0)	220	1,100	5.6			
Arsenic	ug/L	MD (5.0)	NO (5,0)	150	340	10			
Barium	ug/L	57	92.9	4,100	21,000	2,400			
Beryllium	ug/L	ND (1.0)	ND (1.0)	NS	NS	NS			
Boron	ug/L	ND (50 0)	ND (50.0)	1,600	8,100	3,100			
Cadmium	ug/L	NO (1),C)	1.0	NS	NS	NS			
Calcium	ug/L	23,800	16,400	NS	NS	NS			
Chromium	ug/L	HD (5.0)	MO (5.6)	NS	NS	NS			
Cobalt	ug/L	MD (5.0)	ND (5.0)	19	95	NS			
Copper	ug/L	ND (6.01	ND (6.0)	NS	NS	NS			
ron	ug/L	ND (50.0)	3,120	1,5004	1,500	NS <sup>4</sup>			
.ead	ug/L	NO (20)	9.7	NS	NS	NS			
Magnesium	ug/L	4,110	3,350	NS	NS	NS			
Manganese	ug/L	(4D /5 0)	481	NS	NS	1,000			
Molybdenum	ug/L	MD (10.0)	ND (10 0)	NS	NS	NS			
Nickel	ug/L	NO (10.0)	NO (10.01	NS	NS	NS NS			
Potassium Selenium	ug/L	933 ND 15 07	1,280	NS NS	NS NS	NS NS			
Silver	ug/L ug/L	NO (1 0)	ND (1.2)	NS	NS NS	NS NS			
Sodium	ug/L	9,290	4,710	NS	NS NS	NS.			
Fhallium	ug/L	ND (10.0)	ND (10.0)	13	65	0.24			
Vanadium	ug/L	MD (5.0)	ND (8.0)	100	510	NS			
Zinc	ug/L	NO (10 0)	29.3	NS	NS	NS			
Mercury	ug/L	MD (0.00)	ND (0.20)	NS	NS	NS			
Dissolved Metals Analyses (6010/7471)	A 2 more to the con-	History and the Lite	Beternaming Age	A CONTRACTOR		SANIE SAN			
Aluminum, Dissolved	ug/L	ND 250.03	MC (50.0)	NS	NS	NS			
Antimony, Dissolved	ug/L	ND (5.0)	ND (5 5)	NS	NS	NS			
Arsenic, Dissolved	ug/L	ND (5.0)	ND (6.0)	NS	NS	NS			
Barium, Dissolved	ug/L	63.1	45.2	NS	NS	NS			
Beryllium, Dissolved	ug/L	4D (1.0)	但许可	NS	NS	NS			
Boron, Dissolved	ug/L	ND (50.0)	ND (50 a)	NS	NS	NS			
Cadmium, Dissolved	ug/L	ND (1 D)	NO (1, d)	0.25	2.01	NS			
Calcium, Dissolved	ug/L	24,500	14,500	NS	NS	NS			
Chromium, Dissolved	ug/L	ND (5 th	MD (8.0)	74.1	569.8	NS			
Cobalt, Dissolved	ug/L	ND (5.5)	NC /5.01	NS	NS	NS			
Copper, Dissolved	ug/L	MD (F 0)	ND (5.0)	9.0	13	NS			
ron, Dissolved	ug/L	ND (50 S)	ND (50 0)	NS	NS	300			
ead, Dissolved	ug/L ug/L	4,620	2,830	2.5 NS	64.6 NS	NS NS			
Magnesium, Dissolved Manganese, Dissolved	ug/L ug/L	8.8	14.1	NS NS	NS NS	NS NS			
Molybdenum, Dissolved	ug/L	MD (10.0)	HD (260)	NS	NS	NS			
Vickel, Dissolved	ug/L ug/L	MD (10.0)	ND (150)	52	470	610			
otassium, Dissolved	ug/L	1.010	818	NS	NS	NS			
Selenium, Dissolved	ug/L	MD (5.0)	ND (5.9)	4.6	NS	NS			
Silver, Dissolved	ug/L	MD (1.0)	NO (5.0)	NS	3.2	NS			
Sodlum, Dissolved	ug/L	10,900	5,360	NS	NS	NS			
Thallium, Dissolved	ug/L	14D (10.0)	MD (10.0)	NS	NS	NS			
/anadium, Dissolved	ug/L	(4D (6.0)	ND (6.0)	NS	NS	NS			
Zinc, Dissolved	ug/L	(0.01) CM	HO PEGOL	120	120	NS			
Mercury, Dissolved	ug/L	ND (0.20)	MD (0.20)	0.77	1.4	0.05			

Sample Identification		ELY #2 A	ELY#2 B	Surfac	rface Water Quality Criteria				
Sample Location Sample <mark>Date</mark>		<b>Upgradient</b> 12/8/2009	Downgradient 12/8/2009	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria			
Parameter	Units			011101110	710010				
VOCs Analyses (8260)	Market St.	THE STATE OF THE STATE OF	AVEILLA MICHESALE	DESIGNATION OF THE REAL PROPERTY.	A STATE OF THE PARTY	ながらいい			
1,1,1-Trichloroethane	ug/L	HD 11.01	ND (1.0)	610	3,000	NS			
1,1,2,2-Tetrachloroethane	ug/L	14D (1.0)	HQ (1.2)	210	1,000	0.17			
1,1,2-Trichloroethane	ug/L	(C () CM	<b>科技有效</b>	680	3,400	0.59			
1,1-Dichloroethane	ug/L	MOTACE	M8 (1.5)	NS	NS	NS			
1.1-Dichloroethene	ug/L	8D11.51	ND (1.3)	1,500	7,500	33			
1,2,4-Trichlorobenzene	ug/L	ND (5.8)	HD (19.5)	26	130	35			
1,2,4-Trimethylbenzene	ug/L	NO (1.0)	MD (1.0)	NS	NS	NS			
1,2-Dichlorobenzene	ug/L	NC (1.0)	110 (1.0)	160	820	420			
1,2-Dichloroethane	ug/L	NO IT DI	MD (* 0)	3,100	15,000	0.38			
1,2-Dichloroethene (Total)	ug/L	MD (2,0)	NG (2.0)	NS	NS	NS			
1.2-Dichloropropane	ug/L	NO (1.0)	ND 11.01	2,200	11,000	NS			
1,3,5-Trimethylbenzene	ug/L	ND (° A)	MOAD	NS	NS	NS			
1,3-Dichlorobenzene	ug/L	NO 11 01	HDM 0)	69	350	420			
1,4-Dichlorobenzene	ug/L	NOTE OF	MD (1,0)	150	730	420			
2-Butanone (MEK)	ug/l.	ME (16.0)	HD (10.0)	32,000	230,000	21,000			
2-Hexanone	ug/L	MD (10'0)	ND (10.0)	4,300	21,000	NS			
4-Methyl-2-pentanone (MIBK)	ug/L	NO (10.0)	MD (10'0)	5,000	26,000	NS			
Acetone	ug/L	HOMEN CH	ND (10.0)	86,000	450,000	3,500			
Benzene	ug/L	16.0 CM	MD (5.0)	130	640	1.2			
Bromochloromethane	ug/L	ND (N. 0)	ND (1.0)	NS	NS	NS			
Bromodichloromethane	ug/L	MD (1.0)	ND(5.0)	NS	NS	0.55			
Bromoform	ug/L	ND (10)	MD (5.0)	370	1,800	4,3			
Bromomethane	ug/L	ND (1.2)	(C.r) GN	110	550	47			
Carbon disulfide	ug/L	(0.2) QN	ND (s).01	NS	NS	NS			
Carbon tetrachloride	ug/L	MD (1:0)	ND (1.0)	560	2,800	0.23			
Chlorobenzene	ug/L	MD [1 0]	ND (4.0)	240	1,200	130			
Chloroethane	ug/L	MD (7.0)	ND M G	NS	NS	NS			
Chlaroform	ug/L	ND (1.0)	MD (5.0)	390	1,900	5.7			
Chloromethane	ug/L	ND (5.0)	NO (SO	5,500	28,000	NS			
cis-1,2-Dichloroethene	ug/L	NO 13.03	HD (F.D)	NS	NS	NS			
cis-1,3-Dichloropropene	ua/L	NO 1 of	ND (1.0)	61	310	0.34			
Dibromochloromethane	ua/L	HD (5 0)	NO (1,0)	NS	NS	0.4			
Ethylbenzene	ug/L	NO (1,3)	MD (1.0)	580	2,900	530			
Isopropylbenzene (Cumene)	ug/L	NO P IN	- MO (4 0)	NS	NS	NS			
m&p-Xylene	ug/L	ND (2.0)	WD (2.5)	2105	1,100 <sup>5</sup>	70,000 <sup>8</sup>			
Methylene Chloride	ug/L	ND (1.0)	WD (5.0)	2,400	12,000	4.6			
Methyl-tert-butyl ether	ua/L	NO 11 (0)	NO (1.0)	NS	NS	NS			
Naphthalene	ua/L	NO (2.0)	NO (2.0)	43	140	NS			
n-Butylbenzene	ug/L	NO (YO)	IND (1 D)	NS	NS	NS			
n-Propylbenzene	ug/L	NO (7.6)	(E) (1)	NS	NS	NS			
p-Xylene	ua/L	(0.2) (0)	MD (4.0)	2105	1,1008	70.0008			
p-Isopropyltoluene	ug/L	NO (1.0)	MD (1.0)	NS	NS	NS			
sec-Butylbenzene	ug/L	MO (1.0)	ND (1.0)	NS	NS	NS			
Styrene Styrene	ug/L	ND (1 0)	ND (5.0)	NS NS	NS	NS			
Tetrachloroethene	ug/L	ND (1.0)	ZD - 0	140	700	0.69			
Toluene		NO M.OI	3DH 0	330	1,700	1,300			
trans-1,2-Dichloroethene	ug/L ug/L	MD (1.0)	ND (1.0)	1,400	6,800	1,300			
trans-1,2-Dichloroptoetnene		MD (1.0)	ND (1-0)	61	310	0.34			
Trichloroethene	ug/L ug/L	nD (1 0)	NO (1 0)	450	2,300	2.5			
Vinvl chloride		NO (1.0)	NO (1 0)	NS NS	2,300 NS	0.025			
Vinyi chloride Xylene (Total)	ug/L ug/L	MO (3,0)	MD (2.0)	210	1,100	70,000			

Sample Identification		ELY #2 A	ELY #2 B	Surface Water Quality Criteria <sup>1</sup>					
Sample Location Sample Date	25.20	<i>Upgradient</i> 12/8/2009	Downgradient 12/8/2009	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria			
Parameter	Units				7.00.10				
SVOCs Analyses (8270)	NORTH ST	ATC AND ADDRESS OF	102-62-5111-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1						
1,2,4-Trichlorobenzene	ug/L	MD MUD	NO (1 1)	26	130	35			
1,2-Dichlorobenzene	ug/L	MD (1.1)	HD (5.1)	160	820	420			
1,3-Dichlorobenzene	ug/L	MD/MM	4D (* 1)	69	350	420			
,4-Dichlorobenzene	ug/L	AD (3.1)	NO 45 51	150	730	420			
1-Methylnaphthalene	ug/L	ND 17 ST	NO IS ST	NS	NS	NS			
2,4,5-Trichlorophenol	ug/L	VD (2.3)	ND (2.5)	NS	NS	NS			
2,4,6-Trichlorophenol	ug/L	PD (1.51	20/121	91	460	1.4			
2,4-Dichlorophenol	ug/L	NO (1 1)	45/1,6	340	1700	77			
2.4-Dimethylphenol	ug/L	45 (5 S)	MD (15)	130	660	380			
2,4-Dinitrophenol	ug/L	BD (2.5)	KD (2.5)	320	1600	0.05			
2,4-Dinitrotoluene	ug/L	ND (	NO 1525	130	660	69			
2,6-Dinitrotoluene	ug/L	4D (3.5)	NO (LS)	200	990	0.05			
2-Chloronaphthalene	ug/L	MD 15 (1)	NO (ES)	NS	NS	1000			
2-Chlorophenol	ug/L	340 (1.3)	4D (11)	NS	NS	NS			
2-Methylnaphthalene	ug/L	HID (1 1)	(IV1) CIS	NS	NS	NS			
2-Methylphenol(o-Cresol)	ug/L	NO M.II	HD (s.s)	NS	NS	NS			
2-Nitroaniline	ug/L	ND (2.8)	(4D (2.8)	NS	NS NS	NS			
2-Nitrophenol	ug/L	ME (5.5)	MD (1 1)	1600	8000	NS			
3&4-Methylphenol(m&p Cresol)	ug/L	100 (2.1)	ND (2:5)	NS	NS	NS			
,3'-Dichlorobenzidine	ug/L	35 th. ft	IF N CK	NS	NS	NS			
-Nitroaniline	ug/L	ND (2.5)	ND (2.8)	NS	NS	NS			
,6-Dinitro-2-methylphenol	ug/L	MD (2.5)	NE (2.5)	16	80	13			
-Bromophenylphenyl ether	ug/L	MD (5.11	ND (5.3)	54	270	NS			
-Chloro-3-methylphenol	ug/L	(ND (11)	ME-M-45	NS	NS	NS			
I-Chloroaniline	ug/L	NOTES	HD M. ST	NS	NS	NS			
I-Chlorophenylphenyl ether	ug/L	ND (1.5)	NO ISSUE	NS	NS	NS			
4-Nitroaniline	ug/L	ND (7.8)	RD (23)	NS	NS	NS			
-Nitrophenol	ug/L	ND (1.1)	NO (1.1)	470	2300	NS			
Acenaphthene	ug/L	DHII	4001	17	83	670			
Acenaphthylene		ND (1.1)	NO (7.3)	NS	NS NS	NS			
	ug/L	SE (1.1)	NO (1.1)	NS NS	NS NS	8300			
Anthracene	ug/L	NEGAT		NS NS					
Azobenzene	ug/L		ND (( 1)		NS	NS			
Benzo(a)anthracene	ug/L	HC (1.1)	ND (1,1)	0.1	0.5	0.0038			
Benzo(a)pyrene	ug/L	310 (1.1)	ND (1 1)	NS	NS	0.0038			
Benzo(b)fluoranthene	ug/L	NO (4.4)	HD (1.1)	NS	NS	0.0038			
Benzo(g,h,i)perylene	ug/L	MOZEN	MD (4 s)	NS	NS	NS			
Benzo(k)fluoranthene	ug/L	MD (4.4)	ND (5.4)	NS	NS	0.0038			
Benzoic acid	ug/L	NO (10.5)	ND (10.8)	NS	NS	NS			
Benzyl alcohol	ug/L	ND (1.4)	ND Rest	NS	NS	NS			
pis(2-Chloroethoxy)methane	ug/L	ALTER 11	NO Hat	NS	NS	NS			
ois(2-Chloroethyl) ether	ug/L	NO(11)	ND G.SI	6000	30000	0.03			
ois(2-Chloroisopropyl) ether	ug/L	ND (1.1)	NO (1-1)	NS	NS	1400			
nis(2-Ethylhexyl)phthalate	ug/L	ND (1.1)	(2.1) CM	910	4500	1.2			
Butylbenzylphthalate	ug/L	MD71.41	ND (1.1)	35	140	150			
Carbazole	ug/L	ND (5.5)	ND (1.1)	NS	NS	NS			
Chrysene	ug/L	ND (f.v)	ND (1.1)	NS	NS	0.0038			
Dibenz(a,h)anthracene	ug/L	plD (1.1)	ND (1.1)	NS	NS	0.0038			
Dibenzofuran	ug/L	ND (1.1)	ND (1:11	NS	NS	NS			
Diethylphthalate	ug/L	<b>州区(4.3)</b>	NO (1.1)	800	4000	17000			
Dimethylphthalate	ug/L	KC (1.1)	ND (5A)	NS	NS	NS			
Di-n-butylphthalate	ug/L	ND (1.1)	PD (1.1)	21	110	2000			
Di-n-octylphthalate	ug/L	MODIA	ND (1.1)	NS	NS	NS			
luoranthene	ug/L	ND (1.5)	ND (1.1)	40	200	130			
luorene	ug/L	NO 11.11	#D (2.1)	NS	NS	1100			

#### Dimock Township Susquehenna County, PA

Sample Identification		ELY#2	ELY#2 B	Surface Water Quality Criteria <sup>1</sup>						
Sample Location Sample Date Parameter	Units	Upgradient 12/8/2009	Downgradient 12/8/2009	Fish and Aquatic Life Criteria - Chronic	Fish and Aquetic Life Criteria - Acute	Human Health Criteria				
SVCCs Analyses (8270) Continued	ACAD MATERIAL	Color of the Wilder	THE DESIGNATION OF THE PERSON	Some Charles	ALL SATING PUT AN	A DESCRIPTION OF THE PERSON OF				
Hexachloro-1,3-butadiene	ug/L	ND (9.5)	用品件到	2	10	0.44				
Hexachlorobenzene	ug/L	(1,1) GM	ND (1.1)	NS	NS	0.00028				
Hexachlorocyclopentadiene	ug/L	NE (1.1)	ND (1.1)	1	5	40				
Hexachloroethane	ug/L	ND (5,7)	MD (11)	12	60	1.4				
Indeno(1,2,3-cd)pyrene	ug/L	NCTACL	MD (1 1)	NS	NS	0.0038				
Isophorone	ug/L	NE(11)	MOTATI	2100	10000	35				
Naphthalene	ug/L	NEMA	利益性、利	43	140	NS				
Nitrobenzene	ug/L	MD (1 1)	100(件件)	810	4000	17				
N-Nitrosodimethylamine	ug/L	MD MILE	ND (1.1)	3400	17000	0.00069				
N-Nitroso-dl-n-propylamine	ug/L	ND (11)	MC (1.1)	NS	NS	0.005				
N-Nitrosodiphenylamine	ug/L	NO (1.1)	ND(L)	59	3000	3.3				
Pentachlorophenol	ug/L	ND /2.51	ND (2.5)	0.00589	0.00768	0.27				
Phenanthrene	ug/L	MD (* 1)	和自己的	1	5	NS				
Phenol	ug/L	ND (111)	ND(11)	NS	NS	21000				
Pyrene	ua/L	ND (= 3)	ND (1 1)	NS	NS	830				

= Results exceed SHS surface water quality criteria.

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<sup>1=</sup> Values from 25 Pa Code Chapter 93.8, Table 5; values assume a pH of 6.5 SU and hardness of 100 mg/L, where applicable. Values provided for chromlum are for chromlum III. Values for chloride, TDS, pH, manganese and Iron from 25 Pa Code Chapter 93.7, Table 3.

2= ND (1 0) = Parameter not detected at the detection limit specified in parentheses.

<sup>3=</sup> No Standard.

<sup>&</sup>lt;sup>4</sup>= The specific water quality criteria for total recoverable Iron is for aquatic life uses and is expressed as a 30-day average concentration. The water quality criteria for human health is expressed as dissolved iron. See 25 PA Code Section 93.7.

<sup>&</sup>lt;sup>5</sup>= As total xylenes. <sup>5</sup>= As total xylenes.

#### Table 4.7-1 Analytical Results for Soll Ely 4/6H Wellsite

Sample Identification	1	ELY-4-P1A 5/25/2010	ELY-4-P1B 5/25/2010	ELY-4-P2A 5/25/2010	ELY-4-P2B 5/25/2010	ELY-4-P3A 5/25/2010	ELY-4-P3B 5/25/2010	ELY-4-P3C 5/25/2010	ELY-4-P4A 5/25/2010	ELY-4-P4B 5/25/2010	ELY-4-P5A 5/25/2010	ELY-4-P5B 5/25/2010	ELY-4-P6A 5/25/2010	ELY-4-P6B 5/25/2010	ELY-4-P7A 5/25/2010	ELY-4-P7B 5/25/2010	SOIL Residential Used Aquifer MSCs <sup>1</sup>
Parameter	Units				2,2,2,2,0,0			-12-12-11		-1,1,1,		.,		-,,			
General Chemistry Analyses		STATISTICS OF	A Same of the Re-	THE SECOND STREET	STATE OF THE	part of the second	A STATE OF THE STA	Company of States	And the second		Control of the last		Same of Contract	MAN WEST	700 - 200	AND DESCRIPTION	WHEN SHE WAS
Percent Moisture (ASTM D2974-87)	1 %	10.6	17.6	8.6	10.2	10.9	9.3	8.8	17.6	15.1	14.8	13	11.2	22.4	29.4	21.4	NS <sup>3</sup>
Nitrogen, Ammonia (EPA 350.1)	mg/kg	45.2	76.8	13.3	17.4	33.6	7.8	212	337	39.3	88.5	19.9	160	10.8	183	20.9	1,900
pH (EPA 9045)	Std. Units		4.9	5	5.7	5.2	5.3	6.4	6.3	5.1	6.3	5.7	6	5.5	5.3	6.3	NS
Chloride (SM 4500-CI-E)	mg/L	5.5	35.8	5.5	ND (3.0)	MD (3.0)	NO.810M	MD (3.0)	NO (3.0)	3.8	ND (3.0)	ND (3.0)	ND (3.01	ND /3 01	ND (3.0)	ND (3.0)	NS
Surfactants (MBAS, SM 5540C)	mg/L	MD (0.10)2	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	MD (0.10)	ND (0.10)	ND (0.10)	(01.01 G/f	ND (0.10)	MD (0.19)	NS
Diesel Components (DRO, EPA 8015B Mod)	mg/kg	232	41.1	NO (7.1)	58.6	12.6	ND (7.2)	ND (7.2)	23.7	NO (7.8	NO (7.8)	ND (7.6)	ND (7.3)	ND (3.5)	ND (9.3)	ND (8.4)	NS
TPH (C06-C10) (GRO, EPA 8015B Mod)	mg/kg	ND (11.1)	ND (12.9)	ND (9.7)	ND (10.0)	No.(11.4)	ND (9.5)	ND (8.6)	ND (11.8)	ND (8.6	ND (12.8)	ND (12.7)	ND (10.1)	ND (14.1)	ND (16.4)	ND /13.81	NS
Ethylene Glycol (EPA 8015)	mg/kg	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	NO (10.0)	MD (10.0)	NO (10.0)	ND (10.0)	ND (10.0)	ND /10.01	ND (10.0)	ND (40.0)	ND (10.0)	ND (10.0)	1,400
Metals Analyses (6010B/7474)	ACCOUNTS NO	4 1 1 1 1	willy see Nik	STORY MANAGEMENT	DESCRIPTION OF THE PERSON OF T	A CHEST AND DE	A THE REST	NEED WEIGHT	No. of States	SULT MUNICIPAL	CARLE ST AREA	OF THE STATE OF	120 TO 1	C-8010 - 12	HE ENGLISH	ESSAU SELECT	AND DESCRIPTION
Aluminum	mg/kg	14,100	16,900	12,700	14,000	16,500	14,500	15,400	14,100	13,300	14,700	14,900	12,900	13,900	18,200	18,100	190,000
Antimony	mg/kg	MD (0.30)	ND (0.43)	ND (0.34)	ND (0.45)	ND (0.40)	0.86	ND (0.46)	ND (0.51)	ND (0.35)	ND (0.44)	ND (0.42)	ND (C 45)	ND (0.49)	ND (0.62)	ND (0.45)	27
Arsenic	mg/kg	29	19.3	20.7	26.3	5	3.8	3.3	17.9	12.1	2.7	3.4	35.9	8.2	22.8	32.6	12
Barium	mg/kg	3,900	1,340	111	115	93.4	84.4	90.3	108	61.1	113	65.9	127	111	380	317	8,200
Beryllium	mg/kg	0.71	0.6	0.83	0.84	0.81	1,1	1.3	0.59	0.62	0.54	0.66	0.85	0.41	1.5	1.8	320
Boron	mg/kg	7.5	8.9	9	9.6	10.3	12.7	12.5	8	7.3	8.4	8.6	9.9	8.2	10.6	10.6	1,900
Cadmium	mg/kg	0.75	0.46	0.85	0.9	0.62	0.49	0.53	0.71	0.45	0.4	0.36	1.2	0.46	1.1	1	38
Calcium	mg/kg	945	533	940	1,490	184	626	661	623	260	1,070	415	1,170	644	1,870	1,620	NS
Chromium	mg/kg	14.7	16.8	14.4	15.1	17.7	18.9	20.3	13.7	14	16	18.5	14.5	13.6	20.3	21.8	190,000°
Cobalt	mg/kg	15.3	12.9	13.8	14	11.7	11.8	12.1	11.6	10.5	9.1	11.4	14.5	6.3	11.8	13.5	50
Copper	mg/kg	20.4	11.3	18.4	21.4	6.8	6.1	6.2	14.4	12.4	3.4	5.5	28.6	7.2	24.7	38.7	8,100
Iron	mg/kg	26,000	26,200	28,600	27,700	33,800	37,100	38,600	24,000	23,900	28,700	29,600	30.100	23,900	28,600	30,500	150,000
Lead	mg/kg	58.9	19	41.1	71	7.5	6.2	6.4	33.8	16.8	5.5	6.1	69.1	20.1	38.1	32.5	450
Magnesium	mg/kg	4,450	3,950	4,360	4,520	4,780	5,580	6,010	3,350	4.040	3.440	5,240	4,540	2,220	3,140	3,610	NS
Manganese	mg/kg	894	929	1,390	1,110	952	863	829	1,020	473	1,050	296	1,490	704	2,980	4,210	2,000
Molybdenum	mg/kg	NO (1 2)	ND !1.7.	ND /1 41	D (1.8)	ND (1.6)	ND (1.8)	ND (1.9)	ND (2.1)	ND (1.9)	ND (1.8)	ND (4.7)	ND (1.3)	ND (2.3)	ND (2.5)	ND (1.8)	650
Nickel	mg/kg	21.9	20.1	22.7	22.9	27.4	29.3	30.6	18.5	20.6	17.8	28.2	24	10.5	18.5	21.3	650
Potassium	mg/kg	1,410	1,240	1,540	1,630	1,490	1,880	1,970	1,190	1,130	992	1,120	1,670	995	1,740	1,810	NS
Selenium	mg/kg	MD (0.30)	MD (0.43)	ND (0.34)	ND (0.44)	ND (0.40)	0.56	ND (0.48)	NO (0.51)	0.35	0.62	0.52	ND (0.45)	0.73	ND (0.82)	NO (0.45)	26
Silver	mg/kg	0.31	0.34	0.29	0.29	0.41	1.6	0.43	0.36	0.28	0.35	0.37	0.31	0.42	0.32	0.25	84
Sodium	mg/kg	323	606	ND (340)	ND (442)	ND (395)	ND (408)	MC (485)	ND [514]	MD (355)	ALC 1445	MD (\$42)	NO (447)	ND (488)	ND (621)	(SNA) CM	NS
Thallium	mg/kg	ND (1.2)	NO(1.7)	ND (1.4)	ND (1.8)	MD (1.8)	18.1) OM	NO (1.8)	ND (2.1)	NO (1.4)	MD (1.8)	ND (1.T)	15,7) OM	ND (2.0)	ND (2.5)	3.1	14
Vanadium	mg/kg	17	22.9	16.3	17.2	21.3	20.2	20.6	18.2	15.7	20.9	19.4	16.2	22.1	29.1	29.8	1,500
Zinc	mg/kg	96.9	78.2	81.4	107	66.3	66.7	69.5	85	67.7	62.8	58.5	122	59.2	98.7	83.6	12,000
Mercury	mg/kg	NO (9 11)	NC (3/11)	MD (0.55)	MD10.111	ND (5.11)	NO (0.11)	MD (0.10)	PUD (07.53)	NO (0.11)	ND (9.12)	MD (0.11)	MD (0.11)	NO (0.12)	NO 10 141	NO (0.12)	10

#### Table 4.7-1 Analytical Results for Soil Ely 4/6H Wellsite

Dimock, Township Susquehana County, PA

Sample Iden	mple Date	ELY-4-P1A 5/25/2010	ELY-4-P1B 5/25/2010	ELY-4-P2A 5/25/2010	ELY-4-P2B 5/25/2010	ELY-4-P3A 5/25/2010	ELY-4-P3B 5/25/2010	ELY-4-P3C 5/25/2010	ELY-4-P4A 5/25/2010	ELY-4-P4B 5/25/2010	ELY-4-P5A 5/25/2010	ELY-4-P5B 5/25/2010	ELY-4-P6A 5/25/2010	ELY-4-P6B 5/25/2010	ELY-4-P7A 5/25/2010	ELY-4-P7B 5/25/2010	SOIL Residential Used Aquifer MSCs <sup>1</sup>
Parameter	Units																
VOCs Analyses (8260)			A STATE OF THE STA	A STATE OF THE REAL PROPERTY.	Supplemental Air	The second	the second second	A PLANTAGE THE	Water Street	Short - make	TATE SALES	STREET, STREET	STANGE BEEF	A CONTRACTOR	O SHIP HE WAY	See THE	ASSESSED BY AND REAL PROPERTY.
,1,1-Trichloroethane	mg/kg	NC (0.0044)	NO (0.0075)	ND (0.0044)	MC (0,0048)	ND (0.0040)	ND (0.0044)	ND (0.0044)	ND (0.0083	ND (0.0048)	ND (0.0056)	MD 79,00801	ND (0.0062)	(880C.0) CIM	NiD (0,0079)	(8800,Q) CM	20
.1,2,2-Tetrachloroethane	mg/kg	ND (0.0044)	MD (0,0075)	ND (0.004=)	NO (0.0049)	NO (0.0040)	ND (0.0044)	NC (0:0044)	ND (0.0083)	NO (0.0048)	ND (0.0056)	NO (0.0050)	NO 19,0952	NO (0.0065)	MD (0.0079	MD (0.0086)	80.0
,1,2-Trichloroethane	mg/kg	ND (0.0044)	ND (0.0078)	MC (0.00MI)	ND (0.0049)	ND (9.6646)	NO (0.0044)	MD (0.5044)	AID (0.0063)	MD (0.0048)	MD (0.0056)	ND (0.0050)	NO (0.0052)	MD (8 0098)	MD (0.00793	(3200.0) GM	0.5
,1-Dichloroethane	mg/kg	MD (0.0044)	ND (0,0078)	ND (0.0044)	ND (0.0045)	MD /0.0040	ND (0.0044)	ND (0,0044)	ND (0.0083)	(8400.0) QM	MD (0,0058)	ND (0.3050)	MD (0,0082)	MD (0,0058)	ND (0.0079)	ND (0.0088)	3.1
,1-Dichloroethene	mg/kg	ND (0.0044)	ND (0.0075)	NO (0.0044)	NO (0.0049)	ND (0.0040)	MD (0.9944)	ND (0.0044)	NO (0.0083)	(8400.0) GM	HD (0,0058)	NO (0.0050)	ND (0.0082)	ND (0:0058)	ND (0.0079)	(5800.01 GM	0.7
,2,4-Trimethylbenzene	mg/kg	NO (0.0044)	MD (0.0075)	ND (0.0044)	(6)×00,0043)	MD (0.0040)	ND (0.004e)	MD (0.0644)	ND (0.0063)	(8400 c) CM	ND (0.0058)	HD (0.0050)	MD (0.0052)	(380G,G) CIK	ND (0.0079)	MD (0.0065)	8.4
,2-Dichlorobenzene	mg/kg	MD (0:0044)	ND (0.0075)	ND (0.0044)	NO (0.0049)	MD (0.0040)	MD (0.0844)	ND (0.0044)	ND (0.0083)	(8±00.0) OM	ND (0.0056)	MO (9 0050)	MD (0,0052)	MD (0.0058)	ND (0.0079)	ND (0.0085)	60
,2-Dichloroethane	mg/kg_	HD (0.0044)	ND (0.0075)	MD (0,00±6)	ND (0.0049)	ND (0.0040)	A200.0) GM	MD (0,0044)	ND (0.0093)	NO (0.0048)	NO (0,0056)	MD (0.0050)	NO (0,0082)	MD (0:0066)	ND (9,0079)	ND (0.0085)	0.5
,2-Dichloroethene (Total)	mg/kg	ND (0.0089)	ND (0.0143)	ND (0.0087)	ND (0.0097)	ND (0.0081)	ND (0.0088)	ND (0.0088)	MD (0.0126)	(8900,0) QM	MD (0.0112)	NO (0.0101)	ND (0.0104)	MD (0.0132)	ND (0.0158)	MD (0.0181)	7 <sup>5</sup>
,2-Dichloropropane	mg/kg	ND (0.0044)	ND (0.0075)	NO 10 0044	MD (0.0049)	ND (0.0040)	(\$450,9) GM	ND (0.0044)	ND (0.0083)	ND-10.0048)	MO (0.0058)	NO (0.0050)	ND (0.0052)	MD (0.0088)	ND (0.0079)	MD (0.0085)	0.5
,3,5-Trimethylbenzene	mg/kg	ND (0.0044)	ND (0.0075)	MO (0.004z)	ND (0.00491	ND (0.0040)	MD (0.0044)	NO (0.004)	ND (0.0083)	18400,00 OH	MD (0.0056)	ND (0,0050)	MD (0.0052)	NO 10,0088)	MD (0.0079)	NO (0.0085)	2.3
,3-Dichlorobenzene	mg/kg	ND (0,0044)	MD (0.0078)	ND (0,0044)	ND (0.0049)	MD (0.0040)	ND (0,0044)	NC (0.0044)	MD (0.0088)	ND (0.0048)	MD (0.0056)	ND (0.0080)	ND (0.0062)	ND (0.0086)	NO (0.0079)	ND (0.0085)	61
,4-Dichlorobenzene	mg/kg	MD (0.0064)	ND (0,0075)	(0.0044)	ND (0.0049)	ND (0.0040)	ND (0.0044)	(##06.0) GIA	ND (0.0083)	ND (0.0048)	(3600.0) DM	ND (0.0050)	ND (0.0052)	ND (0.0038)	ND (0.0079)	ND (0.0088)	10
-Butanone (MEK)	mg/kg	MD (0.0088)	ND (0.0149)	ND (0.0087)	NO (0.0037)	0.204	(8806,0) GM	0.0103	0.244	ND (0.0096)	ND (0.0112)	0.0167	0.0318	0.0133	0.0837	0.0562	400
-Hexanone	mg/kg	NO (0.0085)	ND (0.0148)	ND (0:0087)	NO (0.0097)	NO (0.0031)	(8800.0) GK	NO (0.0089)	NO (0.0128)	(2000,0) OM	ND (0.0112)	NO (0,0101)	MD (0.0104)	MD (0.0132)	ND (0,0158)	ND (0.0131)	1,1
-Methyl-2-pentanone (MIBK)	mg/kg	NO (0.0089)	ND (0,0149)	NO (0.0087)	ND (0.0097)	NO (0.0081)	HD (0.9088)	MD (0.0089)	MD (0.0128)	MD (0.3098)	ND (0 0112)	NO (0.0101)	ND (0.9104)	ND (0.0132)	MD (0,0138)	MD /0.01311	290
cetone	mg/kg	0.132	0.281	0.123	0.142	0.84	0.0871	0.118	0.654	0.133	0.132	0.302	0.28	0.322	ND (0.820)	ND (0.889)	3,300
enzene	mg/kg	NO (0.0044)	MD (0.0076)	(baccoc) CIA	NO (0.0049)	ND (0.0040)	ND (0,0044)	MD (0.0044)	MD (0.0983)	NO (0.0048)	ND (0.0068)	NO (0.0050)	MD (0.0052)	MD (0.0068)	MD (0.0079)	ND (0.0065)	0.5
romodichloromethane	mg/kg	ND (0.0044)	ND (6.0075)	ND (0.0044)	ND (0.0048)	ND (0.0040)	NO (0.0844)	ND (0.0044)	(0.0083)	ND (0.0048)	ND (0.0058)	ND (0.0050)	ND (0.0052)	HD (0.0088)	ND (0.0075)	MD (0.0065)	8
romoform	mg/kg	13±00.0) DM	ND (0.0075)	MO (0.0044)	ND (0.0049)	ND (0.0040)	ND (0,0044)	ND (0.0044)	ND (0.0083)	ND (0,0543)	NC (0.0058)	NO (0.0050)	ND (0.0052)	MD (0.0088)	MO (0.0078)	MD (0.0065)	8
romomethane	mg/kg	ND (0.0044)	ND (0.0076)	ND (0.0044)	ND (0.0049)	10400.0) GM	ALD FOLDOWAY	MD (0.0044)	ND (0.0083)	ND (0.0048)	MC (0.0058)	MD (0.0050)	ND (0.0052)	ARD (0.0088)	(9700.0) OM	ND (0.0095)	1
Carbon disulfide	mg/kg	0.0143	NO 10.00761	ND (0.6044)	ND (0.0049)	ND (0,0040)	NO (0.66±4)	ND (0.00%)	ND (0.0083)	ND (0.0048)	ND (0.0058)	NO (0.0050)	ND (0.0052)	ND (0.0068)	ND (0.0079)	ND (0.0085)	150
Carbon tetrachloride	mg/kg	ND (0.0044)	ND (0.3075)	ND (0.0044)	NO (0.0049)	NE (0.0040)	ND /0 00441	ND (0.0044)	NO (0.0083)	MD-10.0048)	NED (0.0059)	MD (0.0050)	MD (0.0052)	MD (0.0088)	NC (0.0079)	NO (0,006E)	0.5
Chlorobenzene	mg/kg	NO (0.0044)	ND (0.0075)	MD (0.0044)	MD (0.0049)	NE (0.0040)	NO (0.0044)	ME (0.0044)	ND (0.0083)	ND (0.0049)	(\$600.01 DM	NO 10,00501	NO (0.0052)	MD 70.00651	ND(0.0079)	ND (0.0065)	10
Chloroethane	mg/kg	MD (0.0044)	NO (0.007.5)	MD (0.3344)	ND (0.0049)	ND (9.8040)	(Angelo); GM	MB (0.0044)	NO (0.0033)	MD (0.0048)	MD (9,0058)	MO (0.0050)	NO 40,00527	18800.0) CM	NO (0.0079)	MD (0.0035)	23
Chloroform	mg/kg	NO (9.3044)	MO (0.0075)	ND (0.0044)	NO (0.00#8)	ND 10.00401	ND (0.0044)	M9 (0,0844)	E800.01 GM	(8±00.0) DA	NE 40,00361	NO 70 0050	ND (0.0052	MD (0.0086)	NO-0.0079	NO (0.0065)	8
Chloromethane	mg/kg	NO (DISOAK)	NO 10.0075	MD (0.0044)	MD (0.0049)	NB (0.0040)	NG (0.0044)	ND 10.00441	ND (0.0083)	ND (0,0048)	ND (0.0058)	NE (0,0050)	ND (0.0052*	MD 70,0068x	NO 10.0079	MD (0.0085)	3
is-1,2-Dichloroethene	mg/kg	(AD(0.0044)	ND (0.9075)	NO (0.0044)	NO (0.0049)	MD (0.8040)	ND (0.0044)	ND (0.0044)	ND (0.008a)	(BNDC.C) CH	ND (0/0658)	NO 0 0350	MS (0.0052)	ND (0.0086)	ND /0.00791	NO (0.0065)	7
sis-1,3-Dichloropropene	mg/kg	NO (0.0044)	ND (0.0075)	MD (0.0044)	ND (0.0049)	10+00.01 GW	(##00.00 GM	ND (0.0044)	NO 10.0083	ND (0.0045)	ND 10,0058	NO (0.0050)	HID (0.0052)	ND 10.0088	NO (0.0079)	NO (0,0085)	0.66
Dibromochloromethane	mg/kg	ND /0:00441	NO 19 99751	ND 10.00 441	ND (0.0049)	MD (C.0040)	MD (0.0044)	NO (6,0044)	AID (0.0083)	MD (0.0048)	/8800,0° DW	MD /0.0050	ND (0.0032)	NO (0.0058)	NC.10,00791	NO 10,0085)	8
thylbenzene	mg/kg	ND /9:3046	MD (0.0075)	MD (0.0044)	ND (0.0049)	ND (0.0040)	MD (0.00#4)	ND 70.00440	0.0140	ND (0.0048)	ME (0.0058)	NO (0,0550)	NO (0.0052)	MD (0.0085)	MD (0.0079)	ND (0.0065)	70
sopropylbenzene (Cumene)	mg/kg	(45 (G.3044)	NO 18 0075	ND (0.0044)	NE 18 50491	NO (0.0346)	ND (0.00=4)	MD (3.5044)	ND (0.0063)	MD 16,50481	NE (0:008)	ND 13.00501	745 (0,0052)	ND (0.0096)	ND (0.0079)	ND (0.0088)	600
n&p-Xylene	mg/kg	ND (0.0089*	ND 10.0149	ND (0.0087)	NO (0,0007)	NED TO DOB!13	(6500.0) CIN	MO (0:0089)	NEL (0.0126)	HD (0.0096)-	MD (0.0112)	145.10.01517	ND (0 0104)	NED 10-04321	ND 10.01581	ND (0.0131)	1,000°
lethylene Chloride	mg/kg	NO (9.3844)	ND (0.0075)	ND (0.0044	MO (0.0049)	MD 10 COM21	ND (0.0044)	ND /0.00441	ND 10.0083	NO 10,99431	NO (0.0058)	MD (9.0980)	ND /0.00521	ND 70-00331	NO (0.0079)	NE 10 9085	0.5
fethyl-tert-butyl ether	mg/kg	MD (0.0044	ND 10,0075	NO 10.0044;	NO 10.00491	NO 73.28403	NO CLOSE	ND 10:00445	ND (0.0088)	WD (0.0348)	NO (0.0056	NG (0.3653)	ND 10 33521	ND (0.0066)	MD (0.3079)	ND 15,0085	2
Japhthalene	mg/kg	FEEROC CT CTG	NO (0.0075)	NO 10.00441	ND (0.0049)	NB 13 00401	ND (0.0044)	ND (0.0044)	ND (0.0083)	ND (0.8048)	NO (0.8856)	ND (0.0950)	NO (0.0052)	MD (0.0088)	ND /0.0079	NE 80,0085)	25
-Butvlbenzene	ma/ka	NO (0.0044)	ND (0.3875)	NO (0.0044	NO 70.00491	MD 70 86401	(E300.00 (CS)	MD (0.0044)	NO (0.0063)	ND (3.35491	NO 75-3058	NO (0.0050)	NEXT0.0052)	ND 10.0065	AND 70-0079	ND 10.0065	950
-Propylbenzene	mg/kg	NO (5.0066)	NO (0.3075)	NO (0.00es)	NO 70-00491	MO 10.0040	ND /0.0046	ND 10 00441	NG (0.3083)	184000,00 GM	ND (0.0058)	MO FO DOSCI	HC (0.0052)	NC 75.0038)	NEL (3.00791	ND (0.0035)	290
-Xvlene	mg/kg	NC (C DOSA	MD (0.0075)	MD (0.0044)	NG (0.00-9)	NO (0.0040)	NO 60 costs	NO (C 0644)	MET (C. DORD)	NO 12 60481	NO (0.0058)	NO 10 00503	NE) (0.0057	NEL (6 GOSE)	MD 10 0079	Vici m noget	1,000 <sup>6</sup>
Isopropyltoluene	mg/kg	ND 10.3044	NE 75 00761	ND /D GCes	NO 10,0049	NO:0.9040	NB.(6.0044)	NO IC BOKE	0.0187	NET 10-00461	ND 70 70661	NO (0.0050)	ND (3.0052+	ND (3.0088)	ND (0.0078	ND 70 00581	NS
ec-Butylbenzene	mg/kg	NE (0.9046)	ND/0.0075	NO /3 30441	ND 70.00491	ND (0.0640)	ND /0.68441	NO 70 6044	AD (0.0083)	NO 45 00485	MC/0.00551	NO 10 5050	NO FO MISS	ND (0:0388)	NE/930731	4500 G GB	350
tvrene	mg/kg	ND (0.0044)	NO (0.2075)	ND /0.0044	AID /0 (000)	ND (0.534)	ND /0.00=41	NC 10,90441	NO 12 0083	NO.70.3048	ND (3.0058)	NO 70,00801	NO /5 00621	NO (0.0088)	NE (0.0079)	ND 10 00851	24
etrachloroethene	mg/kg	ND (0.0041	ND (0.0075)	NO 72.0044	NO 10.00431	NO 10 3345	MD (0.0044)	N2/00064y	NG-f0 9083	MS 49 /30435	ACC 00 0058	NEI 70,00551	NO /0.00521	NO 10.00861	MD 70.007%	NO (9.0065)	0.5
oluene	ma/ka	19D 10.00=41	ND:0.0078)	NO 12.00441	MD /0.0049:	ND 3.0040	(ab03.070.eda)	FID IC COMA	0.344	NO (0.0048	NO 10 00587	ND 10 00500	-90 (0.00E2)	NO (0.0068)	NO /0 00791	NO 70 00661	100
OTAL BTEX	mg/kg	ND (0.0287)	NE /0 04475	MD (0 0251)	ND /0.0001	VC 05.09491	ND -0.02551	ND (0.0228)	0.358	ND (0.0288)	NO 45 0557	NO 10 03071	ND 10.03121	ND /0 03361	ND 10:0473	MO (3.0333)	NS
ans-1,2-Dichloroethene	mg/kg	ND 10 0044	MO /0.00751	MO75 5042	ND/0.0048:	ND (0.0040)	NO /0.0044	NO DEBAS	240 (0.0063)	SC 40 05481	MID 10 DARS	NO 13 00501	A(0, f0, 00805	NO 70 GORST	ND/3.0079	X6 (0.0055)	10
ans-1,3-Dichloropropene	mg/kg	HG /5.00421	NO 10 00751	NO (0.30set)	ND 10.00481	NO 10 3045	ND (3.0564)	M3 (5,0044)	5/0 rg 0083	MO (0.0048)	ND (0.00661	NE W SIRE	NO CO COEST	ND 10-00881	NO 10 00791	NO 10 0085	0.66
richloroethene	ma/ka	ND 60 00441	NO 10 3073	NO 70 nouse	ND (0.0049	WICHE DO451	125 m no22	NC (0.00de)	MOVE 1083)	ND (0.0548)	NG.03.0358	MC (0 5140)	AID (0.3082)	ND (0.0068)	(05/0/0070)	NO 10 0065	0.5
inyl chloride	mg/kg	ND (0.0044)	ND (0.0075	NO (0/0044)	NE (0.0049)	NO 0 9540	NO STORES	ND /0.0044	AIC /C: 00801	NO 10.00481	NO 10 0058	ND /0 00501	NET OF STREET	NO 19 00881	ND /0.00781	ND (0.0066)	0.2
/lene (Total)	mg/kg	KIES TO DESCRIP	NO 10 02241	Aut on target	NO 70 05 day	NO 15 5651	NO IC ALCO	AUTO YOU THE TO	AID 75 Septem	125 25 F - 12	ND 75.0159	NO 10 3151	AUTO CO TORRE	300 70 AKANI	5/2/2/2/2/2	AD (0.0000)	1,000

Pege 2 or 4

#### Table 4.7-1 Analytical Results for Soil Ely 4/6H Wellsite

Dimock, Township Susquehana County, PA

Sample Identification Sample Date		ELY-4-P1A 5/25/2010	ELY-4-P1B 5/25/2010	ELY-4-P2A 5/25/2010	ELY-4-P2B 5/25/2010	ELY-4-P3A 5/25/2010	ELY-4-P3B 5/25/2010	ELY-4-P3C 5/25/2010	ELY-4-P4A 5/25/2010	ELY-4-P4B 5/25/2010	ELY-4-P5A 5/25/2010	ELY-4-P5B 5/25/2010	ELY-4-P6A 5/25/2010	ELY-4-P6B 5/25/2010	ELY-4-P7A 5/25/2010	ELY-4-P7B 5/25/2010	SOIL Residential Used Aquifer MSCs <sup>1</sup>
Parameter	Units	0/20/2010	0/20/2010	S/ES/ES/IS	0/10/10	O/LOILO /O	0/20/2010	0/23/2010	0/23/2010	0/20/2010	3/23/2010	3/23/2010	3/23/2010	3/23/2010	3/23/2010	3/23/2010	
SVOCs Analyses (8270)	STREET, STREET	CONTRACTOR OF STREET	ALBOHOLOGICO	SECURITIES VOL	NAME OF BRIDE	STATE OF BUILDING	STATE STATE OF STREET	SUITE HARRIST SAN	I H MARKET I	100 May 2010		EUG/SIN STATE	SAN CHARACTER	I SAME LANGE	AVEL PARTY	SCHOOLSE VE	EN THE RESTOR
1,2,4-Trichlorobenzene	mg/kg	MD (0.385)	NO (0.385)	ND (0.363)	ME(10.362)	NC (0.372)	ND (0.334	MB (0.368)	NO (0,401)	ND-(0.380)	108C,03801	NO (0.377)	ND (0.367)	MD (0.424)	ND f0.4570	MD (0.423)	27
1,2-Dichlorobenzene	mg/kg	ND (0.385)	ND (0.383)	rio (0.368)	NO (0.388)	NE (0:372)	ND (0.364)	ND (0.358)	NO (0.401)	NO (0.380)	NO (0.380)	ND (0.377)	MEI (0.387)	NO (0.424)	ND (0.487)	NO (0.423)	60
1,3-Dichlorobenzene	mg/kg	MD (0.385)	1886.01 GM	ND (0.363)	ND (0.388)	ND (0.3T2)	ND (0.354)	MD /0 366)	NO (0.401)	MD (0.380)	MD (0.380)	ND (0.377)	MD (0.387)	NO (0,424)	MD-10,4877	ND (0.423)	61
1,4-Dichlorobenzene	mg/kg	ND (0.365)	NO (0.383)	NO (0.383)	MD (0,388)	ND (0.372)	ND (0.334)	MD (0,358)	ND (0.401)	MD (0.380)	ND 10.380 .	6ID (0.3771	MD (0.367)	ND (0.424)	NO (0.487)	ND (0.423)	10
2,4,5-Trichlorophenol	mg/kg	ND (0.912)	MD (9.93c)	(9.00°) OH	NE (8,926)	MD (0.932)	ND (0.910)	MD (0.889)	ND (1,006)	NO (0.951)	ND (0,950)	1949.0) QM	ND (0.917)	MD (1.080)	NO (1.170	NOV9 050)	2,300
2.4,6-Trichlorophenol	mg/kg	ND (0.365)	MO (0.393)	MD (0.383)	NO (0.365)	NE) (0.372)	ND (0.364)	NE (0.358)	MD (0.401)	(CBE.C) QM	ND (0.380)	ND (0.377)	ND (0.367)	NO (0.484)	ND (0.487)	MO (0.423)	11
2,4-Dichlorophenol	mg/kg	MD (0.366)	ND (0.393)	MD (0.383)	ND (0.388)	ND (0.372)	MD (0.384)	MD (0.356)	MD (0.401)	ND (0.380)	MCI (0.380)	ND (0.377)	ND (0.357)	ND (0,424)	MD (0.487)	MD (0,423)	2
2,4-Dimethylphenol	mg/kg	MD (0.355)	NO (6,393	ND (0.360)	ND (0.388)	NO (0.372)	MO (0,38±)	ND (0.366)	ND (0.401)	MD (0.380)	NE (0.380)	ND (0.377)	MD (0.367)	HD (0,424)	NO 70 #871	NO (0.403)	73
2,4-Dinitrophenol	mg/kg	MD (8.942)	ND (0.884)	MD (0.309)	MD (6'830)	ND (0.932)	MD (0.910)	(866,61 GM	ND (1,000)	ND (0,951)	MD (0.950)	ND (0.944)	MD (0.917)	NO (1,060)	MD (1.170)	ME (1.080)	7.3
2,4-Dinitrotoluene	mg/kg	MD (0.365)	NO (0.383)	MD (0.583)	NO (0.3681	ND (0.372)	NE (0,334)	MD (0.358)	ND (0.401)	ND (0.380)	NO (0,380)	NO (0.377)	ND (0.367)	MD (0 m34)	MC (0.457)	MD (0.423)	0.21
2,6-Dinitrotoluene	mg/kg	MD (0.355)	ND (0.393)	MD (0.988)	MD (9.388)	MD (0.372)	NE (0.364)	NO (0.368)	PMD (0.401)	MD (0.380)	NO (0.380)	NO (0,377)	NE (0.387)	ND (0.424)	MD (0.487)	ND (0,423)	3.7
2-Chloronaphthalene	mg/kg	IND (0.385)	ND (0.393)	ND (0.383)	ND (0.386)	MQ (0,372;	MD (0.384)	MD (0.958)	NO (0.401)	ND (0.380)	MD (0,380)	ND (6 377+	ND 10.3871	ND (0.424)	NO (0.457)	ND (0.423)	6,200
2-Chlorophenol	mg/kg	MD (0,355)	(E88,0) G/4	ND (0,363)	MD 10.358	MD (0.372)	MD (0,384)	ND (0.368)	MD (0.401)	ND (0.380)	MD (0.380)	HD (0.377)	ND (0.387)	MD (0.424)	ND (0.4871	MD (0.423)	4.4
2-Methylnaphthalene	mg/kg	MD (0.365)	ND (0.393)	ND (0.388)	ND (0,338)	NO (0.372)	MD (0.394)	MD (0.359)	NO (0.401)	NO (0,380)	MD (0.380)	MD (0,377)	ND (0.387)	NO (0,424)	ND (0,487)	NO (0,423)	600
2-Methylphenol(o-Cresol)	mg/kg	(65C.01 CIM	ND (0.993)	ND (0.383)	MO rouses	MC (0.372)	PID (0.384)	ND (0.358)	NO (0.401)	ND (0.380)	MO (0.390)	ND (9,377)	ND (0.387)	MD (0.424)	MD (0.487)	ND (0,423)	180
2-Nitroaniline	mg/kg	ND (0.912)	ND (0.984)	ND (0.909)	NG (0.820)	MD (0.932)	ND (0.910)	ND (0.869)	ND (1.008)	ND (0.951)	ND (0.950)	#D (0.94=	ME1(0.917)	ND (1,050)	ND (1,179)	ND (1.060)	11
2-Nitrophenol	mg/kg	MO (0.3861	ND (0.393)	ND (0.383)	MD (0,088)	NO (0.372)	ND (0.384)	ND (0.333)	ND (0.40 I)	NO 86 01 GM	NE (0.380)	MD (0.377)	ME (0,387)	MD (0.43e)	MD (0.487)	ND (0.423)	29
3&4-Methylphenol(m&p Cresol)	mg/kg	ND (0.725)	ND (0.737)	ND (0.727)	ND-(0.738)	NO (0.745)	ND (0.728)	NO (0.711)	MD (0.801)	NO (0.780)	MO (9.780)	MD (0.755)	MG (0,733)	NID (0.849)	ND (0.933)	NO (0.848)	18 <sup>7</sup>
3,3'-Dichlorobenzidine	mg/kg	ND (0.385)	ND (0,393)	ND (0.353)	- NO 10.3681	NE (0.372)	ND (0,384)	MD (0.356)	NO (0.401)	(CBE, O) DIK	ND (0.380)	NO (0.377)	NO (0,387)	MD (0,424)	MD (0.487)	MD 10 4203	8.3
3-Nitroaniline	mg/kg	ND (0.812)	ND (0,984)	MD (0.908)	MD (0.920)	MD (0.932)	NO (0.210)	MD (0.882)	ND(1.000)	1 r56,01 OM	ND (0.950)	ND (0.944:	ND (0.917)	1080111 GM	ND (1 170)	NO (1.080)	1.1
4,6-Dinitro-2-methylphenol	mg/kg	NO (0.942)	ND (0.384)	ND 10,908	ND (0.920)	NO (0.832)	ND (0.910)	NC (0.389)	ND (1,000)	ND (0.951)	ND (0.950)	NO (0.944)	NE (0.917)	NO (1.080)	ND (1 170)	ND (4.080)	0.37
4-Bromophenylphenyl ether	mg/kg	NC (3,385)	MD (0.393)	MD (0.383)	ND 10 3681	MD (0.373)	MD (0.364)	ND (3.366)	ND (0.401)	ND (0.380)	ND (0.380)	NO (0.377)	ND (0.38F)	NO 10-424)	ND /0.437	ND (0,420	NS
4-Chloro-3-methylphenol	mg/kg	MO (\$ 365)	ND (0.393)	NO (9.363)	ND /0.3881	NO (0,372)	ND (0.384)	MO (0.388)	HD (0,401)	NO (0.580)	NO (0.380)	ND (0,377)	ND (0,587)	NO (0.424)	NO (0.487)	MD (0.423)	37
4-Chloroaniline	mg/kg	ND (0.385)	ND (0,383)	NO (0.983)	PID (0,363)	ND 45,372	ND (0.384)	MO (0.368)	ND (0 x01)	ND (0.380)	NO 10,3801	ND (0.377	ND 70.387	MD (0,434)	ND (5,487)	NO (0 423)	0.42
4-Chlorophenylphenyl ether	mg/kg	aip 10 385	ND (0.350)	MC (0.383)	ND (0.368)	MD 10 3721	NO (3,384)	NO 70.356)	ND (0.401)	NO 10,380 )	ND (0.380)	ND (0.377)	MD (0.387)	(40 (0.424)	ND (0.457	MD (0 423)	NS
4-Nitroaniline	mg/kg	NO (0.812)	NO (C 984)	ND (0.909)	ND (0.890)	ND (0.932)	ND (0.810)	NO 10.8881	100011 GM	MD / 0.95* 1	ND (0.960)	ND (0.9=4)	MD (3.917)	MD-11,0801	NOVE STOL	ND (1.050)	3.3
4-Nitrophenol	mg/kg	NO (0.385)	NO (0.323)	MD (6,363)	ND (0.368)	NO (9.372)	ND (0.384)	NO (0.356)	HD (0 401)	NO (0.380)	MD (6.380)	(4D (0.372)	MD 10.387	ND (0.424)	ND 10 487	NO (0.423)	6
Acenaphthene	mg/kg	ND 10.386	ND (0,383)	AD (0.383)	MO (0.388)	ND (0.372)	ND (0.084)	ND 10,358	ND (0,40°)	NO (0.380)	ND (0.380)	ND (9.377)	ND '0.5671	ND 13 424;	ND (G 487)	HD (0.423)	2,700
Acenaphthylene	mg/kg	ND (0.385)	ND (6.383) ND (6.383)	NO (0.363)	ND (0.388)	NO (0.372)	NO (0.364)	NO 70 359)	ND (0.461)	ND (0.380)	NO 10,380*	MO (0.317)	ND (3.387)	AID 10.424)	NO 10.48T1	140 (0.423)	2,500
Anthracene	mg/kg				NS2 (1.368)	NO-70-372)		ND 10 3551	NO 10 4011		PRO No. 3801	ND 70.377	MO 12 3371	ND 10 4241	ND / 0 48Th	MD (0,423)	350
Benzo(a)anthracene .	mg/kg	MD (0.385)	NO (0.393)	NO /6.383	910 (0.388)	NO 70 3721	74D /0.3841	MD (0.356)	ND (0.461)	NO (0.380) NO (0.380)	MD (0.3801	ND 0.377	MC (0,387)	ALD 10 ADAN	ND (0.467)	ND (0,423)	5.7
Benzo(a)pyrene	mg/kg mg/kg	ND (0.385)	MC (0.3931	ND (0.383	NO/0.388	NO 10 372	ND (0.384)	MD (0.358) MD (0.358)	NG 5.4011	NO 10 3801	NO 70 380	NO (0.3771 NO (0.3771	NO (0.387)	ND 19,4241	ND:6-4873	ND (0.4231 ND (3.4231	0.57 5.7
Benzo(b)fluoranthene		MD (0.365)	ND 10 393	210 /6 353	NO /2 365	NO (0.372)	ND (3.384)	MO (0.358)	PNO 10.4011	NO 10.380	NO 10.380	NO 10 317 -	100 4100		NO 10 40 / 1		180
Benzo(g,h,i)perylene	mg/kg mg/kg	NC 10.3651	ND (0.393)	NO (0.334)	260 (0.388)	NO (0.372)	ND 10.3841	MO (3.356)	160 / 3,404 )	ND (0.380)	NO 10.3801	NE GOT	NO (0.387)	710 (0 424)	NO 10 427	40 (0.423)	57
Benzo(k)fluoranthene Benzyl alcohol	mg/kg	NO (0.385)	NO 10 393	No/0.363	ND (0.388)	NO 70 372	ND 10.354	ND 0.358	N/D /02 /401	ND (0.380	603 (0.380)	NO 10.3171	ND (0.357)	NG (0 #24)	NO 10 4871	ND 10 4231	1,800
bis(2-Chloroethoxy)methane	mg/kg	NO (0.385)	Min in tool	MO (0.383)	ND 15.386	ND 13.372	NG (0.384)	THE STATE	AND IN HOT.	10000	ND (0.380	NO 10 377	317 10 247	ND DIVERS	NO 16 481	NO IS USA	11
bis(2-Chloroethyf) ether	mg/kg mg/kg	NO 43.385	MO (0.393)	MD (0.363	NO (0.383)	MO 46,3721	ND (0.384)	1/0/12/3361	NED 10 4011	NO (0.380)	NO 10,3801	NO 10 3771	ND (0.387)	NC 70 4241	NG 10 487	MG 75 450	0.015
bis(2-Chloroisopropyl) ether	mg/kg	20 10 3651	NO 19.392	NO 10,3691	MD (\$1362	NO 10 372	MO (3,384)	74D (0.358	BUT IT SEE	ND (0.380	NO 15 3501	NO 10 377	NC 45.367	ND IG. 4241	M5 (5.487)	ND 45 4231	30
bis(2-Ethylhexyl)phthalate	mg/kg	4D 2.285	NO 19.393	NE (5.383)	MD 50 386	ND (0.372)	NO 0.3841	NO 15 356	NC./D.eCT	NG 19.36G	MD 10 386	NO 15 3771	ND 10.3571	NO 10 424	ND 10.487	ND:5423	130
Butylbenzylphthalate	mg/kg	ND (0.335	NO 10.393	NO (0.363)	ND (0.350	HD (0.372)	NO 10 3841	NO (0.388)	NO 15,401	NO 0.330	NO (0.220)	MET. 16. 1975	ND (0.387)	NO.00.424	NE 15, 4571	WD 40 J00	3,000
Chrysene	mo/kg	A(C) (C) 35.5	AID 10 303	ND (0.553)	WO 10 382	NO 13.372	NO/0384	MO 0 342	10 AD1	NO 10 380	NG 13.383	NO 0 377	NC /0.367	N/3+5 K54	AD CART	A(C+0.429	230
Dibenz(a,h)anthracene	mg/kg	NO (0.355)	AD (0.333)	NO 13 383	ND/0.338	NO 15 5721	ND 0.364	ND 10 358	ND+1409	NO 0 380	ND 10.380	NO 10.3777	NO /0/3871	NG 10.424	40.0487	ND 12 4231	0.57
Dibenzofuran	mg/kg	MD (0.385)	ND /0.3937	170 0 380	ND /5.3881	340 (0.372)	ND/0 384	NO 13 3581	NC (0.491)	NO 5 3601	WE (0.380)	MD 10 377	ND (0.387)	ND (0 424)	NO:10 4271	MD (0.4931	95
Diethylphthalate	mg/kg	NO 73.385	ND 10.393	NG (0.25%)	N.C. (0.353)	NO 200 3112	ND /0.3641	ND-10 388	ND:3 4011	ND (5.350)	ND G 380	ND 0377	NO 40,927	MD 15 424	W2 (0.48*)	ND (0.623)	2,900
Dimethylphthalate	mg/kg	NO (0.385)	NC 0.393	NO 10 355.	MO (C 386)	MD ID 372"	NO 10 3841	MO 0.358	m2 (0.40 -	NO 0.380	MD 15 3801	ND (C.377)	ND 0.361:	NO(6,424)	NO-18-487	AID 15.422	NS
Di-n-butylphthalate	mg/kg	MO (0.385)	NB.15.3531	ND (0.383)	A(C (0.388)	ND (6,372)	NO (0.384)	NO 10 338	NE (3 #S1)	AD-10-380	ND 10 365+	ND (C.377)	NC (0.387)	NO 10 4241	3/3/5/487	NO (0 c/3)	1500
Di-n-octylphthalate	mg/kg	'NO /0.365'	NO 10 397	NO /0.3835	MD /0.3881	ND (0.372)	ND /0.3541	ND (0.355)	HD (5.404)	ND (0.380)	MG /5 385	NO.10 377	HQ./0.3871	MD (0.424)	ND (0.487)	ND (0.423	8,800
Fluoranthene	mg/kg	NO 40 3351	190 (5.393)	NO/6 383	ND (2.358)	ND 45 27 8	MD40.9841	ND (3.238.	MC 13 40 (	ND 15 3801	MES-10-380	NE 13.377	112 (0.387)	N.D.(0, #24)	NO 5.457	(403 / 203)	3,200
Fluorene	mg/kg	ND (0.385)	N2 (0.393)	NC /0 3831	140 (0.352)	AtG (0.072)	THE 10 35-11	ND (0.355)	NOT TO VEST	NO 0380	7/10/10/2801	NO-6 377	NE /0.38*	NO 10 426	AD 12 697	ALC: 10 4003	3,000

Pugn 3 or 4

## Table 4.7-1 Analytical Results for Soil Ely 4/6H Wellsite

Dimock, Township Susquehana County, PA

Sample Identification	1	ELY-4-P1A	ELY-4-P1B	ELY-4-P2A	ELY-4-P2B	ELY-4-P3A	ELY-4-P3B	ELY-4-P3C	ELY-4-P4A	ELY-4-P4B	ELY-4-P5A	ELY-4-P5B	ELY-4-P6A	ELY-4-P6B	ELY-4-P7A	ELY-4-P78	SOIL Residential Used Aguifer MSCs <sup>1</sup>
Sample Date	1	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	5/25/2010	114-114
Parameter	Units			September 1	7 137 17			N. S. C.									
(VOCs Analyses (8270)	NAME OF STREET	September 1	AT SHOULD BE SHOULD SHO	STREET, SQUARE,	San Sandriff Publisher	THE RESERVE OF THE PERSON	AND DESCRIPTIONS	A THE REST	KAN BUNKE	HISTORY BUILDING	Charles and a	E CALLED ST.	THE PERSON NAMED IN	Boursey Water	THE SUITE	ALCOHOL: NAME OF	NEW YORK AND ADDRESS OF THE PARTY OF THE PAR
lexachloro-1,3-butadiene	mg/kg	AD (0.385)	NC (0.393)	MD (0.383)	ND (0.388)	ND (0:372)	ND (0.334)	ND (0.358)	ND 10,4011	NO (0.380)	ND (0.380)	ND (0.377)	ND (0.387)	NO (0.424)	ND (0.457)	ND (0.423)	10
fexachlorobenzene	mg/kg	ND (0.365)	MD (0.993)	ND (0.363)	ND (0.388)	ND (0.372)	NC (0.334)	MD (0.358)	ND (0.401)	ND (0.385)	(0.58.6) DIM	NO (0.377)	NO (0.367)	NO (0,424)	MD (0.497)	MO (0,423)	0.96
lexachlorocyclopentadiene	mg/kg	ND (0.385)	ND (0,393)	ND (0.363)	ND (0.388)	MD (0.372)	ND (0.364)	AD (0.358)	ND (0.401)	ND (0.380)	ND (0.380)	NO (0.377)	ND (0.387)	ND (0.424)	ND (0.487)	MD (0:423)	91
lexachloroethane	ma/ka	ND (0.385)	MD (0.393)	ND (0.363)	MD (0.388)	ND (0.572)	ND (0.354)	ND (0.358)	ND (0.401)	ND (0.380)	NO (0.380)	ND (0,377)	ND (0,357)	NO (0.424)	ND (0.467)	MD (0:423)	0.56
ndeno(1,2,3-cd)pyrene	mg/kg	ND (0.365)	ND (0.393)	ND (0.383)	NO (0.338)	ND (0.372)	ND (0.334)	ND (0.356)	NO (0.401)	(086.0) GM	ND (0.380)	NO (0.377)	ND (0.387)	NO (0.424)	ND (0.487)	ND (0.423)	5.7
sophorone	mg/kg	ND (0.335)	ND (0.393)	ND (0.383)	ND (0.368)	ND (0.372)	MD (0.384)	ND (0.359)	NO (0,491)	ND (0.383)	ND (0.380)	ND (0.377)	NO (0.367)	MD (0.424)	ND (0.467)	ND (0.423)	10
laphthalene	mg/kg	ND (0.385)	NO (0.393)	HO (0.363)	ND (0.383)	190 (0.372)	ND (0.334)	ND (0.353)	MD (0.401)	ND (0.385)	MD (0.380)	ND (0,377)	MD (0.387)	ND (0.424)	MD (0.487)	MD (C.423)	25
litrobenzene	mg/kg	ND (0.355)	MD (0.393)	MD (0.383)	ND (0.358)	ND (9.372)	ND (0.384)	MD (0.353)	ND (0.401)	(0.380) CM	ND (0.380)	ND (0.377)	ND (0.367)	ND (0.434)	ME (0.487)	ND (0.423)	7.3
I-Nitroso-di-n-propylamine	mg/kg	ND (0.385)	ND (0.393)	ND (0.353)	NO (0.368)	MD (0.373)	ND (0.384)	ND (0.358)	ND (0.401)	MD (0.380)	ND (0.380)	NO (0.377)	ND (0.387)	ND (0.424)	ND 40.4871	MD (0.423)	0.0094
I-Nitrosodiphenylamine	mg/kg	NO (0.385)	NO (0.393)	NO (0.383)	ND (0.388)	ND (0.372)	ND (0,384)	ND (0.356)	ND (0.401)	ND (9.380)	ND (0.380)	MD (0.377)	NO (0.367)	NC (0.424)	NO (0.467)	ND (0.423)	20
entachlorophenol	mg/kg	ND (0.912)	MD (0.984)	MO (0.903)	NO (0.930)	ND (0.932)	ND (0.910)	HD (0:889)	ND (1.000)	ND (0.951)	ND (0.950)	NO (0.944)	ND (0.917)	ME (1.039)	NO (1,176)	ND (1,080)	5
henanthrene	mg/kg	MD (0.385)	ND (0.393)	NO (0.383)	NO (0.388)	NO (0.372)	NO (0.384)	ND (0.358)	ND (0.401)	MD (0.3801	ND (0.380)	ND (0.377)	ND (0.387)	NO (0.424)	ND (0.487)	ND (0.423)	10,000
Phenol	mg/kg	MD (0.365)	ND (0.393)	MD (0.353)	NO (0.388)	NO (0.372)	NO (0.384)	MD (0.358)	NO (0.401)	NO (0.380)	ND (0.380)	ND (0.377)	ND (0.367)	NO (0.424)	ND (0,487)	ND (0.423)	200
vrene	mg/kg	ND (0.365)	NO (0.393)	ND (0.383)	MD (0.338)	NEW 3721	ND (0.384)	NO (0.358)	ND (0.401)	NO (0.380)	ND (0.380)	NO (0.3771	ND (0.387)	ND (0.404)	NO (0.487)	MD (0.423)	2,200

Residential, Used Aquifer MSC

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Parameter   Units   S/26/2010   S/26/2010   S/26/2010   Fish and Aquatic Life Criteria - Chronic Cire Cire Cire Cire Cire Cire Cire Cire	/ Criteria <sup>1</sup>
Parameter	Human Health
Acidity, Total (SM 2310B)   mg/L   MD (10.0"   ND (10.0"   NS   NS   NS   NI   Alkalinity, Total as CaCO3 (SM 2320B)   mg/L   14.0   10.0   20.0   NS   NS   NS   NI   NI   NI   NI   NI	CHESTA TAXABLE
Nitrogen, Ammonia (EPA 350.1)   mg/L   0.11   40 7.00   MD 60.01   NS   NS	NS
Chloride (SM 4500-Cl-E)	NS
Ethylene Glycol (EPA 8015) mg/L mg/L mg/L mg/L mg/L mg/L mg/L mg/L	NS 250
Surfactants (MBAS, SM 5540C)   mg/L   MD (0.0)   MD (0.0)   MD (0.0)   MS   NS   NS   NS   NS   NS   NS   NS	NS NS
DH units   DH	NS
Total Dissolved Solids (SM 2540C)   mg/L   126   83.0   76.0   NS   NS   NS   Total Petroleum Hydrocarbons (EPA 1664A)   mg/L   mg/L	NS
Total Petroleum Hydrocarbons (EPA 1664A)   mg/L   MD (4.5)   NC (4.5)   ND (4.6)   NS   NS     Dieset Components (DRO, EPA 8015B Mod   mg/L   MD (6.5)   MD (6.5)   ND (6.5)   NS   NS     Metals (6010/7470)   MD (6.50)   MD (6.50)   MS   T50     Murminum, Total   ug/L   111   MD (6.5)   MD (6.5)   MS   T50     Antimony, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)   MS   T50     Antimony, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)   MD (6.5)   MS   T50     Antimony, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)   MD (6.5)   MD (6.5)     Antimony, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)   MD (6.5)   MD (6.5)     Antimony, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)   MD (6.5)     Antimony, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)   MD (6.5)     Beryllium, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)   MD (6.5)     Cadmium, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)   MD (6.5)     Cadmium, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)   MD (6.5)     Cadmium, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)   MD (6.5)     Cadmium, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)   MD (6.5)     Cadmium, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)     Cadmium, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)     Cadmium, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)     Cadmium, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)     Cadmium, Total   ug/L   MD (6.5)   MD (6.5)   MD (6.5)     Cadmium, Total   ug/L   264   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)     MD (6.5)   MD (6.5)	NS
Diesel Components (DRO, EPA 8015B Mod   mg/L   MD / C ***   MD / C *	750 NS
Materials (60107470)   Materials (60107470)	NS
Aluminum, Total    Ug/L   111   ND 1500   ND 750   NS   750	NS
Antimony, Total	A STANLEY OF THE STAN
Arsenic, Total	NS 5.6
Barium, Total   Ug/L   53.4   62.8   62.2   4,100   21,000	10
Boron, Total	2,400
Cadmium, Total   Ug/L   MD (1 0)   MD (1 0)   NS   NS	NS
Calcium, Total   Ug/L   10,000   8,900   8,930   NS   NS	3,100 NS
Chromium, Total   Ug/L   ND (5.0)   ND (5.0)   ND (5.0)   ND (5.0)   NS   NS	NS
Copper, Total         ug/L         5.8         ND (5.0)         NE (50.0)         NS         NS           Iron, Total         ug/L         264         ND (50.0)         ND (50.0)         1,500 <sup>4</sup> NS	NS
ron, Total         ug/L         264         MD (50.0)         1,500*         1,500*           Lead, Total         ug/L         MD (2.0)         MD (2.0)         MD (2.0)         NS         NS           Magnesium, Total         ug/L         1,980         1,810         1,800         NS         NS           Manganese, Total         ug/L         92.9         8.9         10.1         NS         NS           Molybdenum, Total         ug/L         ND (20.0)         MD (20.0)         ND (20.0)         NS         NS           Nickel, Total         ug/L         ND (20.0)         ND (20.0)         ND (20.0)         NS         NS	NS
Lead, Total         ug/L         ND (2.0)         ND (2.0)         ND (2.0)         NS         NS           Magnesium, Total         ug/L         1,980         1,810         1,800         NS         NS           Manganese, Total         ug/L         92.9         8.9         10.1         NS         NS           Molybdenum, Total         ug/L         ND (20.0)         ND (20.0)         ND (20.0)         NS         NS           Nickel, Total         ug/L         ND (20.0)         ND (20.0)         ND (20.0)         NS         NS	NS
Magnesium, Total         ug/L         1,980         1,810         1,800         NS         NS           Vlanganese, Total         ug/L         92.9         8.9         10.1         NS         NS           Volybdenum, Total         ug/L         ND (20 0)         HD (20 0)         HD (20 0)         ND (20 0)         NS         NS           Vlckel, Total         ug/L         ND (20 0)         ND (20 0)         ND (20.0)         ND (20.0)         NS         NS	NS'
Manganese, Total         ug/L         92.9         8.9         10.1         NS         NS           Molybdenum, Total         ug/L         ND (20.0)         ND (20.0)         ND (20.0)         NS         NS           Nickel, Total         ug/L         ND (20.0)         ND (40.0)         ND (40.0)         NS         NS	NS NS
Nickel, Total ug/L ND (10.01 ND (10.0) NS NS	1,000
	NS
Otessium, Total Ug/L 753 1 618 1 625 1 NS 1 NS	NS
	NS NS
Selenium, Total         ug/L         HD (5.0)         NS         NS           Silver, Total         ug/L         1.4         NC (4.0)         NS         NS	NS NS
Sodium, Total ug/L 4,020 2,020 2,140 NS NS	NS
Thallium, Total ug/L ND 10 G ND 10 G ND 10 G 13 65	0.24
Vanadium, Total ug/L ND (5.0) ND (5.0) ND (5.0) 100 510	NS
Zinc, Total ug/L HD 110.01 HD 110.01 NS NS	NS
Mercury, Total         ug/L         NO (0.20)         NC (0.20)         NO (0.20)         NS         NS           Metals (6010/7470)         NS	NS
Atuminum, Dissolved ug/L ND (50.0) ND (50.0) NS NS	NS
Antimony, Dissolved ug/L ND (5.0) ND (5.0) NS NS	NS
Arsenic, Dissolved ug/L ND (5.0) ND (5.0) NS NS	NS
Barium, Dissolved ug/L 44.7 57.4 54.1 NS NS	NS
Beryflium, Dissolved	NS NS
Soldmium, Dissolved ug/L ND 101 ND 150 0.25 2.01	NS
Calcium, Dissolved ug/L 9,580 8,620 8,460 NS NS	NS
Chromium, Dissolved ug/L ND (5.0) ND (5.0) ND (5.0) 74.1 569.8	NS
Dobatt, Dissolved	NS
Copper, Dissolved         ug/L         MD (5.0)         MD (5.0)         ND (5.0)         9.0         13           ron, Dissolved         ug/L         40 (50.0)         MD (50.0)         NS         NS	NS 300
.ead, Dissolved ug/L H2 (2.0) ND (2.0) ND (2.5) Q, 64,6	NS
Magnesium, Dissolved ug/L 1,830 1,690 1,620 NS NS	NS
Manganese, Dissolved ug/L 24.9 10.7 (€ 15.0) NS NS	NS
Molybdenum, Dissolved         ug/L         MD (20 0)         NO (20 0)         NS         NS           Vickel, Dissolved         ug/L         ND (40 0)         ND (40 0)<	NS 640
Wickel, Dissolved         Ug/L         ND (10.0)         ND (10.0)         ND (10.0)         NS         NS           Potassium, Dissolved         Ug/L         620         ND (50.0)         643         NS         NS	610 NS
Olassidii, Dissolved ug/L 020 00 00 00 00 00 00 00 00 00 00 00 00	NS
Silver, Dissolved ug/L NO (5 0) NO (6 0) NO (7 0) NS 3.2	NS
Sodium, Dissolved ug/L 4,200 2,050 2,290 NS NS NS	NS
Thaillium, Dissolved ug/L ND (10.0) ND (10.0) NS NS	NS
/anadium, Dissolved	NS
Cinc, Dissolved   Ug/L   ND (10.0)   ND (10.0)   ND (10.0)   120	NS 0.05

Sample Identification		Ely Pond	Ely-DW Seep	Ely-DW Seep D (Field Duplicate)	Surfa	ce Water Quality Cr	iteria <sup>1</sup>
Sample Date	Date	5/26/2010	5/26/2010	5/26/2010	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria
Parameter VOCs (8260)	Units	Approximately and	SELECTION OF SELECT	Life Wester Life Lie	CONTRACTOR AND AND	SEGIPLES SERVICE	STREET, 18
1,1,1-Trichloroethane	ug/L	ND (1.0)	ND (5,0)	(ID (1.0)	610	3,000	NS
1.1.2.2-Tetrachloroethane	ug/L	ND IS CI	MD/5.51	W17/1 0	210	1,000	0.17
1,1,2-Trichloroethane	ug/L	NO (1-0)	10.M GK	NOTES.	680	3,400	0.59
1,1-Dichloroethane	uo/L	8/3/10/	NO. (5.0)	ND (1 0)	NS	NS	NS
1,1-Dichloroethene	ug/L	PED #1 01	NO IS OF	ND (10)	1,500	7,500	33
1,2,4-Trichlorobenzene	ug/L	ND (4.0)	HD (1.6)	ND /* 01	26	130	35
1,2,4-Trimethylbenzene	ug/L	MD IT D	MD (1.0)	MD (1 D)	NS	NS	NS
1,2-Dibromoethane (EDB)	ug/L	WD (1.0)	ND (1.0)	10.PT GW	NS	NS	NS
1,2-Dichlorobenzene	ug/L	IND IN QU	ND (1.01	MS (% 0)	160	820	420
1,2-Dichloroethane	ug/L	(D () CH	(4D-(1-E)	ND (1.0)	3,100	15,000	0.38
1,2-Dichloroethene (Total)	ug/L	ND (5.0)	MD (2.5)	ND (2:0)	NS	NS	NS
1,2-Dichloropropane	ug/L	WD (1.0)	MODIA	MD 15 (3)	2,200	11,000	NS
1,3,5-Trimethylbenzene	ug/L	NC (- 0)	ND (* D)	(C.7) CH	NS	NS	NS
1,3-Dichlorobenzene	ug/L	NO:131	ME (1 C)	MD (1 0)	69	350	420
1,4-Dichlorobenzene	ug/L	- NOTECH	NO ITS	110 (1.0)	150	730	420
2-Butanone (MEK)	ug/L	NO (10 St	MD (19.0)	(0.071 GH	32,000	230,000	21,000
2-Hexanone	ug/L	NO /19 31	MOMEGI	ND (10.0)	4,300	21,000	NS
4-Methyl-2-pentanone (MIBK)	ug/L	MD (16 0)	Moneal	M9 (10.0)	5,000	26,000	NS
Acetone	ug/L	WD 110 01	NO (100)	ND HOLL	86,000	450.000	3,500
Benzene	ug/L	NO M O)	ND N OI	(HD #1,0)	130	640	1.2
Bromochloromethane	ug/L	ND (1 0)	MD (1.0)	AD 71.5)	NS	NS	NS
Bromodichloromethane	ug/L	40 (1 0)	(d) (1) (D)	AD (1.0)	NS	NS	0.55
Bromoform	ug/L	ND 15.01	NO IT OF	(0.(1.3)	370	1,800	4.3
Bromomethane	ug/L	ND (3.0)	ND (1,0)	4D 17.01	110	550	47
Carbon disulfide	ug/L	NO 11 ON	(0,7) DM	NO (1.0)	NS	NS	NS
Carbon tetrachloride	ug/L	MD (5.0)	HD (1.0)	MD (10)	560	2,800	0.23
Chiorobenzene	ug/L	MD IN QI	ND M OI	NO (10)	240	1200	130
Chloroethane	ug/L	HE 101	MD (1 C)	14D (1 B)	NS	NS	NS
Chloroform	ug/L	MO11 DI	MORO	NO INC.	390	1,900	5.7
Chloromethane	ug/L	HD M.OI	HD (1.0)	HD 71.01	5,500	28,000	NS
cis-1,2-Dichloroethene	ug/L	יוס לו כאו	ND (1 0)	NO INDI	NS	NS	NS
cis-1,3-Dichloropropene	ug/L	NO IT OIL	(C (5.6)	10 (1) (1)	61	310	0.34
Dibromochloromethane	ug/L	HD 11 OI	(ID 19 0)	16000	NS	NS	0.4
Ethylbenzene	ug/L	NE (VO)	MD (1.0)	NO 61 DI	580	2,900	530
Isopropylbenzene (Cumene)	ug/L	ND H 51	MD (1.0)	MD (1.0)	NS	NS 4 1995	NS
m&p-Xylene	ug/L	NO (25)	HD (2.0)	ND (2 0)	2103	1,1005	70,000
Methylene Chloride	ug/L	ND (CO)	HD (1.0)	HD (1 C)	2,400	12,000	4.6
Methyl-tert-butyl ether	ug/L	(0 11 CV	PID (5.0)	AD M DI	NS	NS	- NS
Naphthalene	ug/L	(4D (2.0)	ND (2.01	NO (2 0)	43	140	NS
n-Butylbenzene	ug/L	(10 (1 0)	ND (1.0)	HC PLOI	NS	NS	NS
n-Propylbenzene	ug/L	ND (1 D)	ND (1.3)	10 11 0	NS	NS	NS
o-Xylene	ug/L	(0.1) OH	ND 25 Q14	10.71 GM	2105	1,100°	70,000°
p-isopropyltoluene	ug/L	(C *) Ch.	(VD (1.0)	HD YS DI	NS	NS	NS NS
sec-Butylbenzene	ug/L	ND (10)	MD (1.0)	ND (1.0)	NS	NS	NS
Styrene	ug/L	HD (1 0)	PID (1.0)	ND (1.5)	NS	NS	NS
Tetrachioroethene	ug/L	ME (1 0)	ND.(1.0)	ind if or	140	700	0.69
Toluene	ug/L	10,71 GM	MD (1.5)	MD (1.0)	330	1,700	1,300
trans-1,2-Dichloroethene	ug/L		HD (1.0)		1,400	6,800	140
trans-1,3-Dichloropropene	ug/L	ND (1.0)	KO (1.0)	MD (1.0)	61	310	0.34
Trichloroethene	ug/L ua/L	ND (1.0)			450	2,300	2.5
Vinyl Chloride			SIE 1" 01	-5 D S1	NS	NS	0.025
Xylene (Total)	ug/L	110 (3.0)	ND 13.01	10 (8) CH	210	1,100	70,000

Sample Identification		Ely Pond	Ely-DW Seep	Ely-DW Seep D (Field Duplicate)	Surfac	ce Water Quality Cr	iteria <sup>1</sup>
Sample Date		5/26/2010	5/26/2010	5/26/2010	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria
Parameter SVOCs (8270C)	Units	All Sales and Assessed			and the state of the last	Water and the first	IS HER WINDS
,2,4-Trichlorobenzene	ug/L	NO H GI	NO 1 TO	HD (5.5)	26	130	35
,2-Dichlorobenzene	ug/L	54D 11 G	MD 11 53	ND IS TV	160	820	420
,3-Dichlorobenzene	ug/L	760 (1.5)	(ND 197)	ND (1.13	69	350	420
1,4-Dichlorobenzene	ug/L	15 ft 0	VID (**)	MOTEST	150	730	420
-Methylnaphthalene	ug/L	NO.77:01	ratio in the	(40 (Yes)	NS	NS	NS
2,4,5-Trichlorophenol	ug/L	시간 (2.5)	ND (3.8)	NG (2.71	NS	NS	NS
2,4,6-Trichlorophenol	ug/L	HID [1 0)	NO.IS (1)	ND (1,1)	91	460	1.4
2.4-Dichlorophenol	ug/L	ND (4.0)	MD(1/1)	WD (< 1)	340	1,700 660	77 380
2,4-Dimethylphenol	ug/L ug/L	MD (2.6)	NO (2.5)	NO 12.7	130 320	1,600	0.05
2,4-Dinitrotoluene	ug/L	ND 11.0	NO (2.0)	MD 15 11	130	660	69
2,6-Dinitrotoluene	ug/L	NO 61 CH	145 FF 14	N2 (1.4)	200	990	0.05
2-Chloronaphthalene	ug/L	10110	No ray	WE (ST)	NS	NS	1,000
-Chlorophenol	ug/L	MC (1.0)	ND (1.1)	NOT A	NS	NS	NS
2-Methylnaphthalene	ug/L	MD (1 0)	NEMBY	ND (51)	NS	NS	NS
?-Methylphenol(o-Cresof)	ug/L	ND #5 0)	NB / 1	MD (1 1)	NS	NS	NS
2-Nitroaniline	ug/L	ND 13 81	MD (2.5)	ND (2.7)	NS	NS	NS
2-Nitrophenol	ug/L	NC (1.0)	MD 15,51	(40) IS (1)	1,600	000,8	NS
8.4-Methylphenol(m&p Cresol)	ug/L ug/L	ND (2.1)	NO 21	HD (2.2)	NS NS	NS NS	NS NS
B-Nitroaniline	ug/L	ND (2.5)	NG (2.8)	MS (27)	NS NS	NS	NS
,6-Dinitro-2-methylphenol	ug/L	ND (2.8)	MD 12.5	ND (2.71	16	80	13
-Bromophenylphenyl ether	ug/L	PED (1.6)	MO 17 Au	ND (1.1)	54	270	NS
-Chloro-3-methylphenol	ug/L	West Di	MD IS IS	ME) (7 *)	NS	NS	NS
-Chloroaniline	ug/L	40 n 0)	ND (1.1)	MD (2.1)	NS	NS	NS
-Chlorophenylphenyl ether	ug/L	AD IS ON	ND IS 3)	ND74.31	NS	NS	NS
-Nitroaniline	υg/L	NC 2 6	ND (2.5)	HD (2.7)	NS	NS	NS
-Nitrophenol	ug/L	PID (1 0)	(HD (271)	6年2月9.21	470	2,300	NS
Acenaphthene	ug/L	40 (10)	MD (Y I)	NO 11 TI	17	83	670
Acenaphthylene	ug/L	AD IS OF	ND (1 11	ND (10)	NS	NS	NS
Anthracene	ug/L	ND (1 0)	MD (\$ 1)	NE CAN	NS NS	NS NS	8,300
Azobenzene Benzo(a)anlhracene	ug/L ug/L	ND FI DI	NO CAS	MD (5.1)	0.1	0.5	0.0038
Benzo(a)pyrene	ug/L	NE (1 d)	SID IT IT	ND (1 1)	NS NS	NS	0.0038
Benzo(b)fluoranthene	ug/L	ND IT C	WD / 11	10/11	NS	NS	0.0038
Benzo(g,h,i)perylene	ug/L	ND /* 01	ND (1.1)	PDITTI	NS	NS	NS
Benzo(k)fluoranthene	Ug/L	47D 12 C	(45 (2.4)	NO 15 TH	NS	NS	0.0038
Benzoic acid	ug/L	HD (105)	(40 /195)	MD (108)	NS	NS	NS
Benzyl alcohol	ug/L	ND #1 0/	ND (1.1)	ND (1.31	NS	NS	NS
is(2-Chloroethoxy)methane	ug/L	NETT OF	ND (* 1)	NO (1.1)	NS	NS	NS
is(2-Chloroethyl) ether	ua/L	ND 11 0)	ND H 4	ND (1.1)	6,000	30,000	0.03
is(2-Chloroisopropyl) elher	ug/L	NE (CD)	NO (1 1)	MB (1.5)	NS 040	NS 4 FOO	1,400
us(2-E(hylhexyl)phthatate Butylbenzylphthalate	ug/L ug/L	ND (* 0)	ND (5.31	ND (1.1)	910 35	4,500 140	1.2
Carbazole	ug/L	10 PT CM	MD (5.5)	MD (1.1)	NS NS	NS NS	NS NS
Chrysene	ug/L	N5 (1.3)	ND (5.5)	ND (1 I)	NS	NS	0.0038
Dibenz(a,h)anthracene	ug/L	VE IS ON	ND (1.5)	MDV551	NS	NS	0.0038
Dibenzoluran	ua/L	MD (1.0)	NO.CLES	110 (1.1)	NS	NS	NS
Diethylphthalate	ug/L	ND-(1,0)	ND (1.5)	2D(13)	800	4,000	17,000
Dimethylphthalate	ug/L	NO (1.0)	ND 11 II	10(11)	NS	NS	NS
Di-n-butylphthalate	ug/L	4D (4 0)	HD (5.ft)	- ND 7" 11	21	110	2,000
N-n-octylphthalate	ug/L	NE / DI	ND(1.1)	ND (1.1)	NS	NS	NS
luoranthene	ug/L	NO (1 0)	HD (5.1) ND (5.1)	NO (1 1)	40 NS	200	130
luorene lexachloro-1,3-butadiene	ug/L ug/L	NO 11.31	LID I M	NO (1.1)	NS 2	NS 10	1,100 0.44
lexachlorobenzene	ug/L ua/L	ND (1.0)	10 14.K1	ND (1.5)	NS	NS	0.00028
lexachlorocyclopentadiene	ug/L	MD (1.0)	ND MAY	ND (1 T)	1	5	40
lexachloroethane	ug/L	NO IT OF	NO P(A)	ND (1.5)	12	60	1.4
ndeno(1,2,3-cd)pyrene	ua/L	NO (1 0)	NO (1.1)	ND (1.3)	NS	NS	0.0038
sophorone	ug/L	MD 11 01	NDM.51	ND (NAS)	2,100	10,000	35
laphthalene	ug/L	140 (1.3)	MD (1.1)	N5 (1 t)	43	140	NS
litrobenzene	ug/L	NO (1 0)	ND (1.11	100 (5.5)	810	4,000	17
I-Nitrosodimethylamine	uo/L.	ND (1.0)	MD (1.4)	ND(11)	3,400	17,000	0.00069
-Nitroso-di-n-propylamine	ug/L	ND (1 0)	ND:(1.1)	HG (1.1)	NS	NS	0.005
I-Nitrosodiphenylamine Pentachlorophenol	ug/L	MD (1.0)	ND (1.1)	ND (3.3)	59	3,000 0.00768	3.3
Phenanthrene	ug/L ug/L	ND / 101	NO (1.5)	ND (2.7)	0.00589	5	0.27 NS
Phenol	ug/L	45 (1 0)	(4D (1 1)	NO (1.1)	1 NS	NS	21,000

#### Dimock Township Susquehanna County, PA

Sample Identification		Ely Pond	Ely-DW Seep	Ely-DW Seep D (Field Duplicate)	Surfac	ce Water Quality Cr	iteria¹ .
Sample Date	Units	5/26/2010	5/26/2010	5/26/2010	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria
8276 MSSV PAH by SIM	Units	Control of the Control	SALES IN SUCCESSION	STATISTICS AND ADDRESS OF THE PARTY OF THE P	Controller of Persons	A STATE OF THE STA	AL DESCRIPTION OF THE PARTY OF
Acenaphthene	ug/L	ND (2.5)	MD (2.8)	NO (2.7)	17	83	670
Acenaphthylene	ug/L	ND /2 8)	A(D (2.5)	ND (2.7)	NS	NS	NS
Anthracene	ug/L	100 (0.23)	ND (0.21)	ND (0.22)	NS	NS	8,300
Benzo(a)anthracene	ua/L	ND (0.21)	410 to 201	HD (0.22)	0.1	0.5	0.0038
Benzo(a)pyrene	ug/L	NO (0.21)	NC (0.2 )	NC (C.SS)	NS	NS	0.0038
Benzo(b)fluoranthene	ug/L	NDIVEN	ND 10.211	ND (\$.22)	NS	NS	0.0038
Benzo(g.h.i)perylene	ug/L	ND (0.21)	HD:021	PID 10:221	NS	NS	NS
Benzo(k)fluoranthene	ug/L	MD 10 21	MD /0.211	HS (C.22)	NS	NS	0.0038
Chrysene	ug/L	HD (0.21)	ND (0.2")	AD (0.22)	NS	NS	0.0038
Dibenz(a,h)anthracene	ug/L	MD (0.24)	NC 10.211	NO (0.22)	NS	NS	0.0038
Fluoranthene	ug/L	NE (0.21)	HD/0.21!	NO 10,221	40	200	130
Fluorene	ug/L	HD ID 201	ME 10 Z+1	ND (0.22)	NS	NS	1,100
Indeno(1.2,3-cd)pyrene	ug/L	州(0.2%)	MD (0.25)	WD 10.221	NS	NS	0.0038
Naphthalene	ug/L	NC (1.0)	ND (1/1)	ND IS ST	43	140	NS
Phenanthrene	ug/L	NO (0.21)	ND (0.21)	ND (0.22)	1	5	NS
Pyrene	ug/L	MD (0.27)	HD.(0.21)	MO (0.22)	NS	NS	830

#### Notes:

5= As total xylenes.

= Results excéed SHS surface water quality criteria

<sup>1=</sup> Values from 25 Pa Code Chapter 93.8, Table 5; values assume a pH of 6.5 SU and hardness of 100 mg/L, where applicable. Values provided for chromium are for chromlum III. Values for chloride, TDS, pH, manganese and Iron from 25 Pa Code Chapter 93.7, Table 3.

<sup>&</sup>lt;sup>2</sup>= ND (1 0) = Parameter not detected at the detection limit specified in parentheses.

<sup>3=</sup> No Standard

<sup>=</sup> No standard.
= The specific water quality criteria for total recoverable iron is for aquatic life uses and is expressed as a 30-day average concentration. The water quality criteria for human health is expressed as dissolved iron. See 25 PA Code Section 93.7.

5= As total xylenes.

Dimock Township Susquehanna County, PA

																			SOIL
Sample Location Sample Identification Sample Date		Gesford 2/7 G-7-P1A 5/26/2010	Gesford 2/7 G-7-P1B 5/26/2010	Gesford 2/7 G-7-P2A 5/26/2010	Gesford 2/7 G-7-P2B 5/26/2010	Gesford 2/7 G-7-P3A 5/26/2010	Gesford 2/7 G-7-P3B 5/26/2010	Gesford 2/7 G-7-P4A 5/26/2010	Gesford 2/7 G-7-P4B 5/26/2010	Gesford 2/7 G-7-P5A 5/26/2010	Gesford 2/7 G-7-P5B 5/26/2010	Gesford 2/7 G-7-P6A 5/26/2010	Gesford 2/7 G-7-P6B 5/26/2010	Gesford 2/7 G-7-P7A 5/26/2010	Gesford 2/7 G-7-P7B 5/26/2010	Gesford 2/7 G-7-P8A 5/26/2010	Gesford 2/7 G-7-P8B 5/26/2010	Gesford 2/7 G-7-P9A 5/26/2010	Residential Used
Parameter	Units																		Aquitor moos
General Chemistry Analyses	ALC: NO	The same of		THE VIEW OF															
Percent Moisture (ASTM D2974-87)	%	17.0	14.0	10.8	9.2	8.7	12.3	9.0	8.8	8.1	11.6	9,4	9.5	8.7	9.9	7.7	12.6	11.9	NS3
litrogen, Ammonia (EPA 350.1)	mg/kg	14.5	15.9	7.3	MD (5.2)	ND (5.5)	ND (5.3)	8.9	NO (5.3)	8.1	NO (5.2)	NO (5.2)	6.8	5.3	8.0	5.7	9.5	14.8	1,900
MBAS (SM 5540C)	ma/L	ND (0.10)2	ND 10 101	NO 10 101	NO (0.10)	MD (0.10)	ND 70.101	NO (0.10)	NO (0.10)	MD (0.10)	(01.3) QK	ND (0 10)	NO (0.10)	0.18	HO (0.10)	101:01 GP	ND (0.10)	ND (0.10)	NS
Chloride (SM 4500-CI-E)	mg/L	3.3	3.7	NO (3,0)	ND (3.0)	NO (3.0)	ND (3.0)	NO (3.0)	(0.8) (0.1)	4.3	NO (3.0)	3.1	5.8	NO (3.0)	ND (3.0):	ND (3.0)	ND (3.0)	3.3	NS
Metals Analyses (6010B/7471)	A STATE OF THE PARTY OF	Marin Prince	STATE OF THE PARTY	THE PROPERTY OF	ASSESSMENT OF THE	Park San	A EL MILLEY	S DOS THE LAND OF THE REAL PROPERTY.	Wall to Have	STATISTICS OF	STATE OF THE PARTY	CONTRACTOR OF THE PARTY OF THE	Maria de la compansión		Continent of	THE PART SHEET	DELESSE AND	State of the same	STORY CONTRACTOR
duminum	mg/kg	12,200	13,700	14,400	12,500	14,100	15,000	13,200	12,900	14,200	14,600	12.600	12,900	14,200	14,700	11,100	16,600	13,400	190,000
ntimony	mg/kg	ND (0.49)	ND (0.38)	ND (6.34)	ND (0.32)	NO (0.48)	0.43	0.78	NO (0.52)	0.61	NO (0.42)	NO (0.37)	NO (0.33)	MD (0.38)	0.63	0.47	0,69	NO (0.48)	27
rsenic	ma/ka	23.5	30.9	14	15.4	22.8	12.2	19.7	16.4	14.3	13.7	14.8	11.1	15.8	12.9	26.3	9.1	42.6	12
arium	mg/kg	1.840	1,430	137	112	146	123	225	135	182	147	120	298	173	144	139	160	198	8,200
eryllium	ma/ka	0.67	0.76	0.78	0.7	0.82	0.81	0.82	0.74	0.77	0.82	0.7	0.62	0.76	0.81	0.9	0.81	0.83	320
oron	mg/kg	8.7	8.5	8	7.3	8.3	7.8	8	8.6	8	8.1	7.3	6.9	7.9	8.2	8.3	7,7	8.4	1,900
admium	ma/ka	0.48	0.51	0.37	0.35	0.42	0.44	0.54	0.46	0.37	0.39	0.44	0.46	0.62	0.43	0.61	0.48	0.49	38
Calcium	mg/kg	4,510	5,520	1,760	2,770	1,600	832	1,620	1,710	1.280	1,380	1,990	3070	1,480	1,420	1,890	1,110	3,880	NS
Chromium	mg/kg	14.6	15.8	16.3	13.9	15,3	15.6	14.2	13.8	15.3	15.9	14	14.4	15.4	16	15.2	17.1	15.7	190,000°
Cobalt	mg/kg	14.3	15.3	11.8	10.5	13.1	12.3	19.1	12.2	12.9	12.5	12.1	10.4	13.2	12.5	10.3	13	17	50
Copper	ma/ka	19.2	16.1	17.8	16.7	18,1	18.3	19.2	16.2	16.8	17,7	17.1	15.7	17.3	16.7	23.1	18.2	21.4	8,100
ron	mg/kg	24,600	26,900	27,500	25,200	27,600	26,600	30.400	25,400	26,500	27,900	25,500	22500	27,200	28,200	31,500	26,900	27,200	150,000
ead	mg/kg	38.5	35.8	14.4	16.1	18.1	12.8	29.7	18.1	17.5	15.2	17	22.2	15.4	13	216	12.3	58	450
Magnesium	mg/kg	4,720	4,750	4,490	4,350	4,410	4,360	4,100	4,040	4,220	4,500	4,200	3750	4,420	4,440	3,250	4,470	5,300	NS
Manganese	mg/kg	1,000	1,400	804	580	1,090	846	2.660	1,000	1,070	1,000	843	689	1,120	918	723	1,360	1,580	2,000
folybdenum	mg/kg	NO (2.0)	ND (1.5)	MEHA	ND (4.3)	ND (1.9)	NO (1.3)	NO 1 81	ND12.13	NC (1.5)	ND (1.7)	MO (15)	NO /1.31	NO (1,S)	MD (1.7)	ND (1.5)	NO (1,6)	ND (1.9)	650
lickel	mg/kg	22.3	24.2	23.2	21.7	24.2	22.2	28.1	23	22.9	24.4	22	19.1	24.7	23.8	19.3	24.7	26.8	650
otassium	mg/kg	1,880	1,920	1,870	2,030	1,920	1,900	1,730	1,980	1.780	1,890	1,810	1670	1,850	1,850	1,700	1,930	1,840	NS
elenium	mg/kg	0.65	HD (0.38)	MD (0.34)	ND (0.32)	ND 10.481	MD 19 32	NO (0,48)	NO (0.52)	ND (5.371	NO (0.42)	NO (0.37)	ND (0.331	NO (0,08°	HD (0.41)	130.01 DM	NO 19.45	NO (0.48)	26
ilver	mg/kg	0.34	0.3	0.27	0.28	0.29	0.88	1.1	1.3	0.95	1.1	0.83	0.82	1	1.1	1.2	1	1.1	84
odium	mg/kg	ND (484)	ND /363	NO (335)	ND 13241	ND (484)	ND (317)	MD (458)	NO (STT)	ND (375)	MD 4221	ND (388)	MO (329)	NO (380)	ND (454)	ND (378)	NO (397)	NO (481)	NS
hallium	mg/kg	0.51 CM	HD (1.5)	MD M.AT	ND /1 21	ND (1.8)	MD (1.3)	ND (1.8)	NO (2.1)	ND (4.6)	NOME	ND (1.5)	NO 71.33	NO.61.51	ND (1.71	ND /1.61	ND 11.8	NO (19)	14
anadium	mg/kg	13.8	15.4	16.2	14.3	16.3	16.6	17.9	15.1	16.2	16.6	14.6	15.5	16.1	17.2	29.9	17.5	15.6	1,500
inc	mg/kg	62	71.3	70.6	69.7	73	68.1	71.5	71	69.5	72.9	70.5	60.7	72.2	70.8	68.4	72.6	74.2	12,000
eccury	ma/ka	74C-01/E46	NO 19 111	NO 12 111	367 (2.35)	NE 15 15	NO/6111	NO 70.101	MED (S. IG)	NO 10.16:	NE(0.31)	70 STE	NC 10.511	NO 76.10:	ND (0.14)	NO 10,10	MD (0.11)	NO 19 151	10

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Dimock Township Susquehanna County, PA

Sample Location		Gesford 2/7	Gesford 2/7	Gesford 2/7	Gesford 2/7	Gesford 2/7	Gesford 2/7	Gesford 2/7	Gesford 2/7	Gesford 2/7	Gesford 2/7	Gesford 2/7	Gesford 2/7	Gesford 2/7	Gesford 2/7	Gesford 2/7	Gesford 2/7	Gesford 2/7	SOIL
Sample Identification Sample Date		G-7-P1A 5/26/2010	G-7-P1B 5/26/2010	G-7-P2A 5/26/2010	G-7-P2B 5/26/2010	G-7-P3A 5/26/2010	G-7-P3B 5/26/2010	G-7-P4A 5/26/2010	G-7-P4B 5/26/2010	G-7-P5A 5/26/2010	G-7-P5B 5/26/2010	G-7-P6A 5/26/2010	G-7-P6B 5/26/2010	G-7-P7A 5/26/2010	G-7-P7B 5/26/2010	G-7-P8A 5/26/2010	G-7-P8B 5/26/2010	G-7-P9A 5/26/2010	Residential Used
arameter	Units																	Service to	Aquifer MSCs <sup>2</sup>
OCs (8260)	OTHER DESIGNATION OF THE PERSON OF THE PERSO	Name and Address of the Owner, where the Owner, which is the Own			and the same of		AND THE RESERVE	OF THE OWNER, WHEN			All the same				No. of Concession, Name of Street, or other Designation, Name of Street, or other Designation, Name of Street,		The second second		Company of the Compan
1.1-Trichloroethane	mg/kg	MD (0.0048	NO (0.0050)	ND (0.0082)	NE (0.0045)	MD (0.0045)	ND (0.0035)	ND 10.00441	NO 10 DOGS	ARD (0.0053)	NID (0.0043)	ND (0.0047)	ND 10 0041	NO 10 00481	Laws (0.5067)	ND (0.005*)	NO 10 0048	ND (0.0042)	20
1.2.2-Tetrachloroethane	ma/ka	NO 10 0048	NO 70 00521	NO 10,0052	ND (0.0045)	NO (0.0041)	NO (0.0045)	MD (0.0041)	NO O SOLL	AID 10 00531	NO /0.30431	NO 70 00671	NO (0.0041)	NO 10 00483	ND (0.0047)	ND (0.0051)	ND (0.0046)	NO (8:0042)	0.08
1,2-Trichloroethane	mg/kg	NO 10,00481	ND (0.0052)	ND 10,0052	MD (0.0045)	NO (0.0041)	(5k00.0) OM	ND (0.0041)	145 (0.00 GK	AID (0.0053)	ND (9.0043)	ND 10.00471	MO (0.0045)	ND (0.0048)	ND (0.0047)	NO /0.005*1	ND (0.0045)	NO (0.0042)	0.5
1-Dichloroethane	ma/ka	MO (0.0043)	MD (0.0052)	NO (0.0052)	ND 10,00481	ND (0.0041)	ND (0.0045)	MD (0.0044)	NO (0.0044)	NO (0.0053)	NO 10 00431	ND 10,00471	NO (0.0041)	ND (0.3045)	NO 10 00471	NO 10 0051)	ND /0.00481	ND (0.0042)	3.1
1-Dichloroethene	mg/kg	(4D (0.0045)	MD /0.00521	NO (0.0052)	ND (0.0045)	ND (0.0044)	MO (0.05×5)	ND (0.0041)	(640,0046)	NO 70-00531	ND (0.0043)	ND (0.0047)	NO (0.0041)	ND (0.0048)	MO (6,0047)	MD (9.0651)	MD (0.0048)	NO (0.0042)	0.7
2,4-Trimethylbenzene	mg/kg	0.0060	NO 70 30531	ND (0.0052)	ND (0.0045)	ND (0.0041)	ND (0.0045)	ND (0.0041)	ND 10 30441	NO (0.0053)	ND (0,0043)	ND (C 0047)	ND (0.0041)	ND (0.0048)	ND (0.0047)	ND (0.0051)	ND (0.0048)	ND (0.0042)	8.4
2-Dichlorobenzene	ma/ka	ND (0,0048)	ND (0.0052)	NO (0.0053)	ND /0.004E)	MD (0.0045)	NO 70.00451	NO (0.0044)	ND (0.0044)	ND (0.0053)	ND (0.0043)	NO (0.0047)	ND (0.0041)	ND (0.0048)	NO 10,00471	NO (0.0051)	MD 10.00481	NO (0.0042)	60
2-Dichloroethane	mg/kg	NO 70 00481	M9 (0.0052)	AD (0.0052)	NO (0.0045)	ND (0.0041)	ND (0.0045)	NO 10.00411	NO (0.0044)	ND (0.0050)	ND 10,00431	'ND (0.0047)	ND (0.004V)	ND (0.0048)	NO 70,00471	NO (0.0051)	AID (0.0048)	NO (6.0942)	0.5
2-Dichloroethene (Total)	ma/ka	ND (0.0092)	MD (0.0104)	NO (0.0104)	(0600.0) GM	NO (0.0083)	ND (0.0091)	ND (0.0082)	(S800.0) DM	NO (0.0108)	ND (0.00851	MD (0.0093)	HE (0.0082)	MD (0.0097)	(NG (0,0034)	ND (0.0103)	ND (0.0092)	ND (0.0064)	75
2-Dichloropropane	ma/ka	NO (9,0048)	NO (0.0052)	NO (0.0062)	ND (0.6045)	MD (0.0041)	NO (0.0045)	ND (0.004)	ND (0.0044)	NO 70,80631	NO (0.0043)	ND (0.0047)	MD (0.0044)	MD (0.0043)	(40, 10, 0047)	NO (0.0051)	195.00.01.00481	ND (0.0042)	0.5
3,5-Trimethylbenzene	ma/ka	MC (0.0048)	NO (0.0052)	ND (0.0052)	(5400.0) OM	MD (0.0041)	ND (0.0045)	ND (0.0041)	P45 (0.0044)	ND (0.0053)	ND (0.0043)	NO (0.0047)	NO (0.0041)	NO (0.0048)	NEL (0.0047)	ND (0.0051)	NO 10,0008	NO (0.0042)	2.3
3-Dichlorobenzene	mg/kg	NO (0.0048)	ND (0,0052)	NO (0.0052)	ND (0.0046)	NO 10.0641	ND (0,0045)	ND (0.0041)	ND (6:0044)	ND (0.0053)	ND 10.09431	MD (0.0047)	140 (0.0041)	NO (0.0046)	ND (9.3047)	ND (0.0051)	ND (0.0048)	MD (0,0042)	61
4-Dichlorobenzene	mg/kg	(8400.0) CM	NG (0.0052)	NO (0.0052)	NO (0.0045)	ND (0.0041)	NO (0.0045)	ND (0.0041)	(Abcc at CM	ND (0.0053)	ND (0.0043)	ND (0.0047)	ND (0.0041)	ND (0.0093)	NO (6,0047)	ND (0.0051)	NO (0.0048)	ND (0.0042)	10
-Butanone (MEK)	ma/ka	NO (0.0382)	ND (C.0104)	ND (0.0104)	(0600.0) OM	ND (0.0083)	140 (0,0091)	ND (0.0082)	NO (0.0088)	MD (0.0108)	MD (0.0005)	(£600'0) QN	NO (0.0082)	ND (0.0087)	NC (0.0094)	ND (0.0103)	IND (0.0082)	PHD (0.0084)	400
Hexanone	mg/kg	NO (0.0082)	ND (0.6164)	7(0 (0.0104)	MO (0.0090)	ND (0.0083)	MO (0.0091)	NO (0.0082)	MD (0.0088)	ND (0.0108)	NO (0.0085)	NO (0.0083)	ND 10 00821	ND (0.0097)	MO (0.009#1	NO (0.0103)	NO (0.0092)	ND (0.0084)	1.1
Methyl-2-pentanone (MIBK)	ma/ka	NO 75-00921	ND /0.01041	FED (5.0104)	(0.0000)	ND (0.0083)	ND (0.0091)	NO (0.0032)	MD (0.0098)	ND (0.0198)	MO (0.0085)	ND (0.0093)	ND (0.0082)	MD 70.00971	NO (0.3094)	ND (0.0103)	ND (0.0092)	NO (0.0084)	290
cetone	mg/kg	0.0979	0.100	0.118	0.0175	0.0333	0,0461	0.0381	0.0252	0.0895	0.0227	0.0236	0.0707	0,0204	0.0343	0.0148	0.0355	0.137	3,300
enzene	ma/ka	140 (0.0048)	ND (0.0052)	ND (0.0052)	ND (0.0045)	(1600.0) CM	PID (0.0045)	NO (0,0041)	NO (0.0644)	ND (0.0053)	ND 10,00431	NO TO OGATE	NO 15 00411	ND /5.0048	NO 10,00471	NO (0.0051)	ND (0.0348)	MD (0.004%)	0.5
romodichloromethane	ma/ka	AID (0.0048)	NO 19-00521	ND 70.00633	NO (0.9045)	HC (0.0044)	ND (0.0045)	MD (0.0045)	NO (0.0044)	ND (0.0053)	NO (0.0043)	ND (0.0047)	ND (0.0041)	MD (0.0048)	NO 10.00471	ND (0.0051)	(8500.0) 048	MD (0.0042)	- 8
romoform	ma/ka	NO (0.0048)	HO (0.0052)	ND (0.00821	NO (0.0045)	NG (0.0041)	NB (0,0045)	NO 70,0641	NO 10.00441	ND (0.0033)	NO (0.0043)	ND (0.0047)	ND (0.0041)	MD /0.00481	NO 10 06471	MD (0.0051)	ND (0.0045)	NO (0.0042)	8
romomethane	ma/ka	NO (0.0048)	(4E-(0.0062)	HD (0.0052)	MD (5.0045)	NED 40,00411	NO (0.0045)	NO 10,00411	NO.10.00461	NO (0.0053)	MD (0.0043)	NO 10.00471	NO (0.0041)	NE (0.0048)	NO 19,004Ti	(1300.00 GM	NO (0 9048)	HD (8.0042)	1
arbon disulfide	mg/kg	0.0236	0.0168	ND (0.0052)	NG (0.0045)	HD (0.00±1)	~iD NU.00451	ND (0.0041)	NO (0.09#4)	ND (0.0083)	NO 10,00431	ND (0.00471	0.0128	NO (0.0048)	NO 10.0047;	ND (0.9051)	MD (0.0048:	0.0252	150
arbon tetrachloride	mg/kg	MC (0.0048)	NO (0.0052)	ND 70:58527	" ND (0.0045)	and revenue	ND (0.0045)	NO (0.0041)	NO (0.3044)	ND (0.0053)	NO 10,00431	NO 10,00471	NO 10 00411	MD (0.5046)	NC (3.0047)	NO 10.00511	ND (0.0248)	ND 10.3042:	0.5
hlorobenzene	mg/kg	NO (0 6046)	NO 40 30591	AID 12.00525	NO (3.0046)	NO COURSE	ND (6,0045)	NO (0.0041)	ND (0.0544)	ND (0.0053)	NO 10,00431	NE 70.0017	NO 10 00411	MD 10 0048	NO (0.0047)	NO 12,0051)	NID 15, 0046)	MD (5.3062)	10
hloroethane	mg/kg	NC 16,5948)	ND (0.0052)	NE (0.0052)	NO 10.00451	(FACC D) CH	MD 10.0045	NO (0.0041)	NO (0.3044)	NO (0.0050)	NES (0.0043)	MD (0.0047)	ND (0.03#1)	ND 10 30481	NO 10 00471	ND 10.0051)	ND 10 00461	MD (0.0042)	23
hloroform	mg/kg	NG 75,00481	ND (0.0082)	NO (0.0053)	- NO (3.00/6)	NEW TO COOK !!	ND 10.00451	NE 10.004011	NO (0.0044)	ND /0.0053	NO.70-00431	NE 10.0047	V31120041	ND 70,00481	NO (0.0047)	MO MUDGET	NO 10:00481	NO TO COME	8
hloromethane	mg/kg	MD 0.3348	NO.45.00821	ND 19,00523	NO RD C045	NO 10,00411	NO (0.0048)	NO (0 3041)	NO /0 cost)	ND 10 00531	MD 10.00=3	NO 70,00470	MD/0,004 D	NO (0.0048)	NG 70.00+7	NO 10 0051	NO (C.BEAS-	742 (C.0342)	3
s-1,2-Dichloroethene	mg/kg	NO 10.00481	NE (0.0052)	ND (0.0052)	MC (0.0045)	HID ID DE##/	MS (0.0045)	NC 0,0041	NO (0.0044)	NO 10 00531	AD (0.0043)	ND (8,0047)	ND 10.30413	ND (0.0046)	ND 10,00475	ND (0.0051)	NO (5.0948)	NE-(0.0042)	7
s-1,3-Dichloropropene	mg/kg	NE 10,00 461	MD (0.0082)	NE (0.0082)	NO (2 0046	NE 15.00415	ND 18.00451	ND (0.0041)	ND (0.0044)	140 (0.0053)	NO 10.0043.	PHO-10.00671	MD 12.00451	MD 10:00451	MS 10,00471	NO (0.005")	ME 13,00481	NO 70 08421	0.66
ibromochloromethane	mg/kg	MD 16 00451	ND (0.0052)	NO 10:0052)	NO 10.0045	HD 10,00411	NO YOU DONE	NO 10.5041,	(ABD (0.0044)	MD 10,00631	NO 19.00431	NO 10.00471	NE (0.0041)	NO (0.0048)	NO 45,0847	NO 10.205 1	ND /0,00481	ME 0.0042	8
thylbenzene	mg/kg	NO 10.00481	ND (0.0052)	ND /0.0052)	MC (0.0045)	ND (0.3041)	ND /0.0045)	NO (3 004*	ND (0.3044)	MD 10 0063	NO 10,00431	NO (0.0047	NO 15,00=11	ND 10.0048	NO 10,00271	ND (0.005*	NO (0.00481	M3 (0.0042)	70
sopropylbenzene (Cumene)	mg/kg	NO 10.0045	NO 42 9052	NØ 15:06525	NG (0,0045)	NO rollowith	MO 70.06451	NS (0.0841)	NO (0.0040)	ND 10,00631	ND (0.0043)	MD (0.0047)	NG (0.0041)	NO 0.0048	ND 10.00471	ND (0.0031)	NO 10,00481	NO (0.0042)	600
n&p-Xylene	mg/kg	ND (0.0092)	NE (0.0104)	NO (0.0104)	ND (0.0090)	HD (0,0083)	ND (0.00911	NO (0.0082)	NO.10.00881	NO (0.0108)	18800.01 CIA	[HE (0.0083)	NO (0.0082)	ND (3.0007)	-MB 10 0084)	ND 10.0 1001	NO (0.0083)	NO 15,00043	1,000
lethylene Chloride	mg/kg	ND 10 00481	NO (0.0052	NO /0.0052	ND (0.0045)	NO 75.0541.	NO (0:0045)	145 (E.0041)	ND (0.8644)	**D (0.0053)	SED 10.3030	NO (0,0047)	NETE SOUTH	16±00.01 GW	NO 15 30471	ND (9.3051)	8400 C) DIM	MD 10.0042	0.5
lethyl-tert-butyl ether	mg/kg	NO 10,0048	ND (7.0052)	NO (0.0052)	NO 10 0045	NO 13,30411	ND (0.0045)	NO 13.0041	ND (\$.0044)	N/D 10:00531	ND (0.0043)	ND (0.0047)	NE 10.0041	AD 10.00461	MO 10.06471	"800-01-CP	ND 75.09491	MD (8 0943)	2
laphthalene	mg/kg	ND 78 (0048)	NO 10 5050;	MD 10.00521	NO (0.9048)	ND 70.88#11	ND (0.00451	ND (0.0041)	ND (0.004e)	NED 10.0083	NO (0.3043)	ND 10.0047	ND (0.0041)	HD (9.0046)	地位的时间	ND (0.0051)	HED (C.0048)	AID 10:00425	25
Butylbenzene	mg/kg	NO 10 3048	NO (0.0052)	WD-18,00-501	ND (0,0045)	NO (0.0041)	NO (0.0046)	NG 19.00411	15400 01 CM	NO 10 00531	NO (0.0043)	ND 70.004FI	NED 75 00411	NO 10,0043	NO (0.0047)	NO (12059)	他に行う場	ME (0.0042)	950
Propylbenzene	mg/kg	MD 10.03461	NO 10,0050.	ND 10 0052	NO (5.0045)	100 (G 3041)	NO 153045	M5 (0.004)	NO 10 0044	ND (0.0053)	NO (DEDIS	7100,0°1017	NE: (0.0041)	NO 10,0048	160 70 4017	NO 10,005 IV	ME 10.0048+	PIO 10,06401	290
Xylene	mg/kg	3100 0 GW	ND 10,00521	NO 10-0052	NO (0.1045)	40 (0.95=1)	ND /0.0045	HE (0.0041)	NE (0.0044)	ND (0.3053)	ND (0.0043)	NG 13 00=71	MD (0.004	MD (0.0040)	NO (0.0047)	NO 10 00611	HS (0.0046)	NO (0.0042)	1,000
Isopropyltoluene	mg/kg	MD (0.0048	NO 60 3083	NO 13,0032*	ND 19 3545	ND 15,30451	NO 10.00457	NO 10.00411	NET IS SCALL	NO /0.00521	ND 13.03431	ND 10 00471	ND:(0:00e11	NO rolgova.	MC 10 CCAT	NO 10,0001	1/0/02048	AC 0.0642)	NS
c-Butylbenzene	mg/kg	NO 10,0945	NE (0.0382)	NC (0.0052	NE 15.0648	NC-10.70e11	AD (C 8045)	NS-(5.8941)	NO (0.004a)	40 (0.0083)	[BAD 15.0043]	NO 70 00471	ND (6-0041)	ND (1.0043)	MD /0.3847	MD (0.0061	NG15.6046	NG 22 3042	350
yrene	mg/kg	MC (\$ 0845	NO 10 00519	240 0.00521	NO 70.004E	ND /0.5641	NO 13 30451	NO 70 00411	ND-10.00#41	NO 16 30531	700 /0.00437	NO 10.00473	ND 20 00 411	NO 70,00431	NO ID. DOAT	NO (0.005%)	NG-10.0048.	h-3 (0.0042)	24
etrachloroethene	mg/kg	MC 12 0045	NO 12-90821	NO.10.3082	NO (0.0045	NO.10.004*1	MD (0.3045)	NO (0.004)	NO 0.5044)	NO 30,0083	M2 (0.00M3)	NO (9.00±7)	0.085	NO 10 00483	CO 3 000 P	ND /0.006*1	NG 10,00461	3(0.70.0642)	0.5
oluene	mg/kg	ND (2:0048)	HG F5 0083	HQ (0.5082)	NO:000481	NG /5.0961	MC (0.0045)	NO 10 5041	NO GOME	JAD 0.00831	NC 10 00431	ND 10.00477	MD 79.00411	ND (0.0048)	NO DOCET	PER 10. 206	NO 10 0548	MD 30 2042"	100
OTAL BTEX	mg/kg	40 70.0278	HO (2.0300)	NG (5.03/3)	NO 10,0271	ME 15 52431	312-15 0172	NO 0.33471	40 /0 (283)	HD:003131	NO 40 0255)	ND (0.0200)	ND 13,0245	NC (9,0290)	NO 10 0080	ND 10,03081	ACC C STRE	MO 10,025	NS
ans-1,2-Dichloroethene	mg/kg	*D (0.95=3)	2505 C 5050	MO 72.00521	ND 10 0046	NE 10,006	10/5/0045	43 to 3000	12 (5.0044)	NE (0.0053)	NO 10 00433	ND (0.0047	ND:10.00411	NO (0.0048	NO DAGET	NB (0.935*)	140 10.30=81	NG /5.00421	10
ans-1,3-Dichloropropene	mg/kg	ND (0.0048	NG 41 0051	N2-82-225.25	NC 3.0046	HO IS SERVI	NC 12-0045	NO 61/33451	NO 2 9044F	NE 10 0053	ND (0.3043)	NO43 2347	N-015-00411	NO 10.00421	NC 3.9347	NO 10,205 F	NO 12,0546	NO 70,00421	0.86
richloroethene	mg/kg	NO 12 50487	H2 (C 3052)	MD (0.0082)	ND 40.0045	NO 10 SEATH	(42 0.0048)	NG 70 0045	NO 10 20 441	ND 70.20821	NO 10.0043	ND 10.0047	ND (C.0041)	FIRST CLASSIFE CITY	NO-12-0047	NG (0.008%)	NE (0.3048)	ViC 10.00421	0.5
inyl chloride	mg/kg	NO.10.0048	NG 15, 8682	240 10 00 621	NO.10.00459	MD 70.00411	MD (0.3046)	ND 13 00411	NS 15 05441	NO 10 0053	ND 70.0043	(CD (0.004T)	/85 /0.00a1	NO 75 0548	NEW TO COMP	NG (0.005)	NO (2.3048)	ND (0.3542)	0
ylene (Total)	mg/kg	W3 C 3 52	90.00.0484	15 15 THAT	NO 65 05 3E	7/5 /5 /5-5 <sub>4</sub>	N= /0.0100	NO.65,55233	NEW OIL DERVIS	NO FOLDING	3/0/0/0/28/	NO GO CHAN	NO 75 01000	MEGERA	AND TO COMPA	N/2 / 0 51 64	MOUNTAINS.	-MG (8.6)25:	1.000

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Dimock Township Susquehanna County, PA

								I								T -			SOIL
Sample Location Sample Identification Sample Date		Gesford 2/7 G-7-P1A 5/26/2010	Gesford 2/7 G-7-P1B 5/26/2010	Gesford 2/7 G-7-P2A 5/26/2010	Gesford 2/7 G-7-P2B 5/26/2010	Gesford 2/7 G-7-P3A 5/26/2010	Gesford 2/7 G-7-P3B 5/26/2010	Gesford 2/7 G-7-P4A 5/26/2010	Gesford 2/7 G-7-P4B 5/26/2010	Gesford 2/7 G-7-P5A 5/26/2010	Gesford 2/7 G-7-P5B 5/26/2010	Gesford 2/7 G-7-P6A 5/26/2010	Gesford 2/7 G-7-P6B 5/26/2010	Gesford 2/7 G-7-P7A 5/26/2010	Gesford 2/7 G-7-P7B 5/26/2010	Gesford 2/7 G-7-P8A 5/26/2010	Gesford 2/7 G-7-P8B 5/26/2010	Gesford 2/7 G-7-P9A 5/26/2010	Residential Used
Parameter	Units	3/20/2010	3/20/2010	3/20/2010	3/20/2010	3/20/2010	3/20/2010	3/20/2010	3/20/2010	3/20/2010	3/20/2010	3/20/2010	3/20/2010	3/20/2010	3/20/2010	3/20/2010	3/20/2010	CIZOIZOTO	Aquifer MSCs2
	Offica		A CONTRACTOR OF THE PARTY OF TH				414				AND DESCRIPTION OF		ALCOHOLD DE LA COLUMNIA DE LA COLUMN		THE RESERVE AND ADDRESS OF THE PERSON NAMED IN COLUMN TWO		and the same of the same	NAME OF TAXABLE PARTY.	West and Parket No.
SVOCs (8270)	Olivery I.	The state of the state of	Control of the Party of the Par	AP SHEDWAY (PE)	STATE AND	STATES AND ADDRESS.	EX-X45-2		CAT LEEDS	OCH DISCO	A STATE OF THE PARTY OF	of the State of the Local Division in	Company of	CALL DESIGNATION OF THE PARTY NAMED IN	ALC: NAME OF STREET	100 10 000	100000000000000000000000000000000000000	1.7 (2.626	27
1,2,4-Trichlorobenzene	mg/kg	ND (0.395)	MD (3.381)	ND (0.370)	ND (0.350)	ND (0.359)	ND (5.368)	NO (0,356)	ND (0.358)	ND (0.354)	ND (0.357)	NO (0.365)	NO (0.359)	MD (0.358)	NO (0.361)	ND (0.353)	ND (0.379)	NO (0,369)	60
1,2-Dichlorobenzene	mg/kg	NO 10,3965	NO (0.081)	ND (0.370)	NO (0.380)	ND (0.353)	ND (0.368)	MD (0.358)	NO (0.958)	NO (0.384)	ND 70.3871	ND (0.385)	NO 10.3581	MD (0.368)	ND (0.381)	MD (0.383)	ND (0.379)	ND (0.389)	
1,3-Dichlorobenzene	mg/kg	ND (0.385)	ND (0.381)	NO (0.370)	ND (0.350)	MD (0.359)	NO (0.385)	ND (0.358)	NO 10.358,	NO (0,354)	ND (0.387)	ND (0.385)	ND (9.358)	ND (9.356)	ND (0.381)	MD (0.353)	NO (0.379)	ND (0.369)	61 10
1,4-Dichlorobenzene	mg/kg	NO (0.385)	NO (6.381)	NO (0.370)	ND (0.360)	ND (0.363)	ND (0,388)	MD (0.358)	NO (0.358)	ND (0.354)	NO (0.387) NO (0.218)	ND (0.385)	NO (0.358)	NO (0.358) NO (0.891)	ND (0.381)	MD (0.383)	NO (0.379)	NO (0.923)	2,300
2,4,5-Trichlorophenol 2,4,6-Trichlorophenol	mg/kg mg/ka	ND (0.389)	ND (0.952) ND (0.361)	MD (0.925) MD (0.976)	NO (0,900) NO (0,380)	NO 10.3331	NO (0.920) NO (0.9389)	NO (0.881)	ND (0.895) ND (0.358)	MD (0.354)	ND (0.387)	ND (0.385)	NO (0.891) NO (0.368)	PID (0.358)	ND (0.381)	NO (0.353)	ND (0.379)	ND (0.389)	11
2,4-Dichlorophenol	mg/kg	nio (0.395)	NO 10.3013	ND (0.370)	MD (0.380)	MD (0.363)	NO 10.3881	NO (0.356)	NO (0.358)	ND (0.354)	NO (0.387)	ND (0.385)	AID (0.358)	ND (0.358)	NO 10,3811	NO (0,350	NO (0.379)	NO (0.369)	2
2,4-Dimethylphenol	ma/ka	NO (0.395)	ND (0.381)	MD (0.370)	NO (0.380)	ND (0.353)	ND (0.386)	ND (0.353)	NO (0,358)	NO (0.354)	NO 79 3871	ND (0.365)	ND (0.355)	ND (0.358)	NO (0.381)	ND (0.353)	ND (0.379)	NO (0.369)	73
2,4-Dinitrophenol	mg/kg	ND (0.989)	NC (0.952)	ND (0.925)	ND (0.300)	ND (0.883)	ND (0.920)	ND (0.881)	NO (0.895)	NO (0.568)	ND (0 918)	NO (0.954)	NO 10.8911	ND (0.891)	MD (0.904)	ND (0.884)	NO (0.947)	ND (0.923)	7.3
2,4-Dinitrotoluene	mg/kg	ND (0.395)	ND (0.381)	ND (0.370)	NC (0.380)	ND (0.353)	AD 10.368	NO (0.358)	ND 10.358	NO 10,3541	ND (0.367	ND (0.365)	NO (0.356)	ND (0.358)	NO (0.381)	ND (0.353)	NO (0.379)	74D (0.389)	0.21
2.6-Dinitrotoluene	ma/kg	ND (0.395)	NO (0.381)	NO (0.370)	ND (0.380)	MD (0,353)	NO (0.388)	NO 10.3681	ND (0.353)	ND (0.354)	ND (0.387)	MD (0.355)	ND (0.358)	ND (0.365)	HD (0.381)	ND /0.353	ND (0.379)	ND (0.389)	3.7
2-Chloronaphthalene	ma/kg	HD (0-395)	ND (0.381)	NO (0.370)	ND (0.360)	NO (0.353)	NO (0.358)	ND /0.3581	ND (0.386)	ND (0.354)	ND (0.387)	NO (0.385)	ND (0.358)	NO (0.356)	ND (0.351)	ND (0.353)	MC (0.3781	ND (0.389)	6,200
2-Chiorophenol	mg/kg	ND 10-325)	NG (0.381)	MD (0.370)	NO (0.360)	NO (0.353)	MO (0.368)	1858,01 GM	NO (0.358)	ND (0.354)	NO (0.35?)	ND (9,086)	MD (0.956)	ND (0.358)	ND (0.361)	ND (0.353)	NO (0.378)	ND (0.389)	4.4
2-Methylnaphthalene	mg/kg	ME 10.3951	140 (0.384)	ND (0.370)	ND (0.350)	NO (0.353)	(888,0) GH	NO (0.358)	ND (0.259)	NED (0.35%)	MD (0.387)	NO (0.385)	MD (0.358)	ND (0.358)	PID (0.361)	ND (0.383)	MD (0.379)	HD (0.359)	600
2-Methylphenol(o-Cresol)	mg/kg	ND (0.395)	NC (0.381)	ND (0.370)	MD (0.360)	ND (0.3531	NE (0.268)	ND (0.358)	ND (0,358)	ND (0.350)	ND (0.367)	ND (0.385)	NO (0.358)	MD (0.358)	ND (0.381)	NO (0.353)	MC (0.979)	ND (0,389)	180
2-Nitroaniline	mg/kg	MC 10.989	ND (0.982)	MD (0,925)	NG (0.900)	NO (0,883)	MD (0:6201	MD (0.881)	NO (0.895)	ND (0,886)	MD [0.918]	NO (0.914)	ND (0,891)	ND (0.891)	MD (0.904)	ND (0.884)	ND 10.947)	ND (0.923)	11
2-Nitrophenol	mg/kg	MD (0.385)	NO (0.381)	ND (0,376)	ND (0.380)	NO 10.353	ND (0.388)	NO (0.358)	ND (0.358)	ND (0.354)	ND (0.387)	ND (0.385)	ND (0.358)	MD (0,355)	ND (0.351)	469 (0.369)	MD (0.379)	NO (0.389)	29
3&4-Methylphenol(m&p Cresol)	mg/kg	MD 10,781)	ND (0.781)	MD (0.740)	ND (0,719)	MO (0.708)	NO (0,736)	NO (0.712)	ND (0.718)	ND (0.709)	NO (0.734)	ND 10,7301	MD (0.112)	ND (0.712)	110 (0.722)	ND (6.707)	ND (0.757)	NO (0.736)	18 <sup>6</sup>
3,3'-Dichlorobenzidine	mg/kg	MC-10.395	ND (0.381)	NO (0.070)	ND (5.360)	(ND (0.553)	MD (0.35a)	NO (0.356)	NO (0.358)	ND (0.354)	ND (0.367)	NO (0.385)	ND (0.358)	ND (0.359)	ND (0.381)	NO (0.353)	ND 10 379	ND (0.359)	8.3
3-Nitroaniline	mg/kg	NO 10 389	NET (0.952)	ND (0.925)	NO follood	ND /0 8831	VID 10 8201	ND (0.891)	(1895) OIA	ND 70.8851	MD (0.918)	ND (9.914)	MD (0.891)	NO 10.891	ND (0.954)	MD (0.884)	ND (0.967)	NO 10.923)	1.1
4,6-Dinitro-2-methylphenol	mg/kg	ND (0.369)	NO (0.932)	PID (0,926)	NO 10 200	NE 40 8831	HD (0 920)	NC (0.891)	ND (0.885)	NO (0.886)	NE (0.918)	NO (0.914)	ND (0.891)	NET (0.891)	ND (0,204)	NO 19 8841	HD (0.347)	ND (0.923)	0.37
4-Bromophenylphenyl ether	mg/kg	AC (0.385)	NO (0.381)	ND (0.370)	ND 70.3801	ND 10.353	MD (0.368)	NO 10.3531	ME (0.368)	NO (0.384)	ND (0.387)	ND (0.385)	MD (0.358)	NO (0.358)	ND (0.381)	ND 10 3631	ND (0,379)	ND (0.389)	NS
4-Chloro-3-methylphenol	mg/kg	NO (0.395)	HD (0.381)	ND (0.376)	NO 40.3803	ND (0.353)	MD (0.358)	NO (0.358)	NED (0.356)	ND (0.354)	NO /0.3671	ND (0.385)	NO (0,368)	ND (3.356)	ND (0.381)	ND (0.353)	NC (0 378)	NO (0.38%)	37
4-Chloroaniline	mg/kg	40 (0.395)	NO 10.381	NO (5 379)	MD (0.380)	ND (0.353)	NO (0.388)	ND (0,358)	ND (0,353)	MD (6.354)	ND (0.387)	NO (0.385)	NO (0.355)	NO 19,358)	NO (0.351)	ND (0.353)	ND (0,279)	NO (0.368)	0,42
4-Chlorophenylphenyl ether	mg/kg	NO 13.3851	NO (0.381)	MD (0.370)	ND (0.360)	NO 10,3531	ND (0.388	ND (0,368)	NC 10:358	NO 10 3541	NO 10,3671	(\$50 0° CH	NO (0.358)	NE (0.355)	AID (0.3811	MD F6.353	NO (0.379)	MD 10 3881	NS
4-Nitroaniline	mg/kg	NO (0.889)	NC 15.952	MC (0.985)	NO (0.900)	NO (0.863)	ND (0.920)	NO (0.891	NO 10.893*	NO 10,886)	NO (0.918)	MD (0.814)	ND (0.891	ND (0.891)	ND (0.804)	ND (0.384	NO 10,9471	MD (0.830)	3.3
4-Nitrophenol	mg/kg	NO (0.395)	NU (U.35")	NO (0.379)	NO 10.3501	MG (0.353)	ND (5:363)	NO 10 3561	ND (0.356)	ND (0.354)	ND (0.387)	ND (0.365)	ND (5.356)	ND (0.358)	149 14164 1	NO 12 353	NO (0.379:	NO 10.3691	2,700
Acenaphthene	mg/kg	NO (0.395)	140 (0.381)	ND 10 379	NO 10.3881	ND 70, 353	MD (0.368)	NO 10.3581	MD 10 358)	40 (0.084)	NO 10.3671	NO (0.385)	NO (9,358)	NO (2.358)	ND (0.381)	7.00.00.00	NO 70 379	ND (0.389)	2,500
Acenaphthylene Anthracene	mg/kg mg/kg	NO 10 395	NO 10,301	NO (0.370)	NO (0.380)	NO 70,3831 40 70 383	NO 10.3881	NO 10 355	ND (0.356)	ND (0.354)	NO (0.367)	ND (0.385)	ND (0.356)	NO (3.356) NO (3.356)	ND (0.381)	NO (0.353)	HO (0.379+	ND (0.388)	350
Benzo(a)anthracene	mg/kg	MD (0.395)	NO 10.38	NO (0.370)	NO 10 380	VID 15 3531	ND 10.3881	NE (0.358)	MC (5.358	ND (0.354)	MD (0.367)	NC (0.266)	NO (0.388)	NO 10 3581	AID (0.361)	NO (0.383)	ND (0.379)	ND (0.589)	5.7
Benzo(a)pyrene	mg/kg	NO 10.395	NO 10 38:11	the to ever	NO 10 355	ME 10 3231	WT RC 0633	MO 10 355	NO (0.059)	ND (0.354)	UD 10 2071	AD 10,000	AID 10 3301	NO 10 355	NO 10 381	NO 10.360	NO (0.379)	NO (0.389)	0.57
Benzo(b)fluoranthene	mg/kg	143 (0.398)	145 (C.381)	NO 13 3701	MD (0.380)	2/0 /0 353	NO (0.358)	NO (0.358)	NO 10,000	MD (0.354)	1/0 /0 3879	AC) (0.385)	NO 10,3581	ND 10.355	ND (0.381)	ed 275 35.15	NO 10 379	NO (0.388)	5.7
Benzo(g,h,i)perylene	mg/kg	ND (0.395)	ND (0.381)	AD (0.376)	NE) (0.380)	ND 10 350	NO (0.388)	NO (0.356)	5/5 /6 348)	NO ID BES	NO 10 387	AID (0.385)	NO (0.338)	NC (0.358)	NO (0.381)	NO (0.353)	MD (0.379)	MD (0.389)	180
Benzo(k)fluoranthene	ma/ka	MD (0.395)	NO 51-78-1	ND-70.370	N2 (0.380)	NO 15 549	NO 55-368	MD (5.358)	NO 10.3591	ND (3.354)	NG (0.287	ND (0.385)	ND (0.358)	ND 10:3581	HD /0.081	NO 10 385	ND (0.378)	NO (0.392)	57
Benzyl alcohol	mg/kg	NO 10 3551	NO (0.381)	ND (5.370)	MC2 (3.380)	40 (0.05%)	NO IO DES	N/T / 2 T/AR!	NO 10 3881	NO (0.384)	ND 10 3575	ND (0:385)	NE (0.358)	MO (0.388)	ND (0.3511	HG (0.353)	WC (3.373)	1956.01-GM	1.800
bis(2-Chloroethoxy)methane	mg/kg	NO 10 398	HD (0.381)	340 40 370	NO.10.350	MD 45-3531	NO.10.3881	140 10 358	NO 4358	ND 10,354	AD (0.387)	MD /0.385	MD:0358	NO 46 358	NC 10 361	ND 10.353	(475.01 Cm)	MD (0.388)	11
bis(2-Chloroethyl) ether	mg/kg	ND 10 396	MO /O SET	90 fo 376	NO 10.360	NO (0.363)	MC (0.358)	ND (0.358)	MD (0.368)	NO (0.354)	ND (2.367)	ND (0.365)	140 10.356	NO (6.356)	NO (0.38 1)	NG 5.352	ND (G.373)	NO (0.389)	0.015
ois(2-Chloroisopropyl) ether	mg/kg	NO 10.3851	NO 15 35 1	NO 12,370	WD (\$1386	NO (5.350)	NO 10 388	ND (0.356)	ND (0.358)	NO (5.364)	ME 10 3871	NE (0.385)	NO (0,358)	NO 12 3551	ND 10 3811	NO 10 353	NC 10:3791	M2 (0.388	30
ois(2-Ethylhexyl)phthalate	mg/kg	MD (0,098)	NED 10,38*1	NE (S.STO)	NO (0.560)	(42 (0.353)	e(C 12.346	ND (5.355)	MD 10 358	ND (0.354)	NC (0.357)	NO 10 365	NO 10.356	NO (0 353)	MC 11.381	MD 10 3531	NG (2.373)	NO 0,3891	130
Butylbenzylphthalate	mg/kg	MD-40,39E	NO (0.381)	HQ (0,370)	NO 10.380)	NO (0 353)	MD (0.386)	MD (0.358)	NE /0.358	NIG 18 3541	NO (0.387)	(ND (0.385)	NO 10 355	ND 10.356)	NO:75,3811	MD 10.3531	INC 10 3791	MC (0.389)	3,000
Chrysene	mg/kg	MC (C 335	ND 45 381	HO 10, 370	ND 10 380	NO (0.953)	NO 10,963	ND (0.355)	ND 0 358	NO 10.354	NO 10.3671	MD (0.355)	HD 10 3581	NO (8.355)	NG-75-381)	MO 10 350	MD (0.379)	MD 10 3381	230
Dibenz(a,h)anthracene	mg/kg	NO 70 385	VED 10 381	ND (0.370)	MD (0.38%)	MD (0,653	NC 20 393	MD 10 358	MB (C.358	NO (0.354)	WC (0.387)	MD 10 3851	NO 10.3581	MD 10:336	NC 15 381	A(2) (0.383)	NC (0.379)	ND 10.388	0.57
Dibenzofuran	mg/kg	ME IL SEE	902 15.38	N2 9.370	ND :0,080*	ND (0.353)	ND /2.386)	MD (0.356)	NO 10,0561	NO 10 354	MC 10,387	MD (7,335)	40 (5.358°	MC /0 388	NO (5.381)	M3 10 3631	NO 10 3731	ND (0.082)	95
Diethylphthalate	mg/kg	4ID (0.288	NO (0.381)	NE 10.375	NO 10, 337	ND (2.353)	NO 10.386	NO 10 358	MC 70 3581	WE 15 364	NC (0.387)	ME (0.335)	ND 19.358	NO (0,358)	NO (0.38"	ND /3.363	NO 10.379	MO 10,389	2,900
Dimethylphthalate	mg/kg	ND 75,396)	188.0) CM	NO 10 3701	NO (0.380)	MG 10 350	MO (0.368)	ND 10 356	ND (0:358)	NO (0.35%)	NO 10 3671	NO 40 3551	NO 10.355	NO 10,355.	NO 15,3811	AC /E.363	40 (0.378)	NO (0.389)	NS
Di-n-butylphthalate	mg/kg	NO (0,395)	ND (0.361)	40 (0.37):	ND 10,3851	100 10 353	-IC 1C 338	NE 10.356	NO 12 358)	NC 16 354	NO 10 357	ND (3,386)	NC 0.355	NE 10 3551	NG.(0:381)	Y3 (0.353)	NO (0.379)	NO 10 388	1,500
Di-n-octylphthalate	mg/kg	MC (3.395)	NO (0.3811	NO 2 370	MD (0.380	NE (0.353)	MD (0.386)	NO 70,358.	ND (0.088)	VID (0.094)	NO 10 357:	MQ 75, 365	ND 10 3651	100 (2.356)	HD-10.3511	WD 10.353	NO 10,3727	ME 12 300	8,800
Fluoranthene	mg/kg	NO 0 395	NO (0 381)	NG /0.370	NC 10 380	ND 40 353	POD (C 335)	MD (0.258)	NO. (0.358)	ND 0.354	NO (0.38*)	NO 10 365	MD (0.358)	NO 0.358	NG (0.361)	260 Tu 353)	NE 10 2791	MD (0.389)	3,200
luorene	mg/kg	20 10 335	NO3303813	F12 12 272	NO111385	ME (0.353)	MD #0 353	V2 (0.358)	MG 5 363	10.10.364	NO 13 387	45 /9 386	AD (0.868)	HO /0 355	NO 0.351	NET (0.353)	A15 (7.3/3)	D 17 725	3,000

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Dimock Township Susquehanna County, PA

Li Li	1																		SOIL
Sample Location Sample Identification Sample Date		Gesford 2/7 G-7-P1A 5/26/2010	Gesford 2/7 G-7-P1B 5/26/2010	Gesford 2/7 G-7-P2A 5/26/2010	Gesford 2/7 G-7-P2B 5/26/2010	Gesford 2/7 G-7-P3A 5/26/2010	Gesford 2/7 G-7-P3B 5/26/2010	Gesford 2/7 G-7-P4A 5/26/2010	Gesford 2/7 G-7-P4B 5/26/2010	Gesford 2/7 G-7-P5A 5/26/2010	Gesford 2/7 G-7-P5B 5/26/2010	Gesford 2/7 G-7-P6A 5/26/2010	Gesford 2/7 G-7-P6B 5/26/2010	Gesford 2/7 G-7-P7A 5/26/2010	Gesford 2/7 G-7-P7B 5/26/2010	Gesford 2/7 G-7-P8A 5/26/2010	Gesford 2/7 G-7-P8B 5/26/2010	Gesford 2/7 G-7-P9A 5/26/2010	Residential Used Aquifer MSCs <sup>2</sup>
arameter	Units																		Additor tiroos
VOCs (8270)	NUMBER OF		DESCRIPTION OF THE PERSON OF T	and a longer	Territory	APPLICATION OF THE PARTY OF THE	TO		A STATE OF THE PARTY OF THE PAR		MYD MER IN		THE SALES	REAL PROPERTY.	BURSEL	SEASON IN SE	KILLIE SE	CANTON DESI	
lexachloro-1,3-butadiene	mg/kg	MD /0.395)	ND (0.381)	ND (0.370)	(05C.0) DM	NO (0,063)	ND (0.368)	ND (0.356)	ND (0.358)	NO (0.354)	ND (0.387)	MD (0.365)	ND 10.356	NO (0.356)	ND (0.361)	NO (0.353)	ND (0.379)	NO (0.369)	10
lexachlorobenzene	mg/kg	ND (0.395)	ND (0.381)	NO (0.370)	NO (0.350)	NC (0.353)	ND (0.388)	MO (0.355)	ND (0.358)	MD 10.3547	ND (0.387)	ND (0.365)	ND (0.358)	ND (0.356)	ND (0.381)	NO (0.353)	NO (0.379)	ND (0.369)	0.96
lexachlorocyclopentadiene	mg/kg	MD (0.395)	ND (0.381)	ND (0.370)	MD (0.360)	ND (0.353)	ND (0.368)	ND (0.356)	ND (0.358)	ND (0.364)	NO (0.367)	ND (0.365)	ND (0.358)	ND (0.358)	ND (0.351)	NO (0.353)	ND (0.379)	ND (0.369)	91
fexachloroethane	mg/kg	ND (0.395)	ND (0.381)	ND (0.370)	NO (0.350)	ND (0.350)	MO (0.388)	MD (0.356)	MD (0.358)	(ID (0.354)	NO (0.367)	ND (0.365)	MD (0.356)	ND (0.358)	ND (0.361)	ND (0.353)	ND (0.379)	NO (0.369)	0.56
ndeno(1,2,3-cd)pyrene	mg/kg	ND (0.395)	MD (0.381)	ND (0.370)	NO (0.060)	ND (0.353)	ND (0.368)	ND (0.358)	ND (0.358)	ND (0.354)	ND (0.367)	ND (0.365)	ND (0.356)	ND (0.356)	ND (0.331:	ND (0.353)	ND (0.379)	1886.01 GM	6
sophorone	mg/kg	ND (0.395)	ND (0.381)	ND (0.370)	ND (0.380)	MD (0.353)	NO (0.368)	ND (0.356)	NO (0.359)	ND (C.354)	ND (0.387)	ND (0.365)	NO (0.358)	NO (0.358)	ND (0.381)	ND (0.353)	ND (0.378)	ND (0.369)	10
laphthalene	mg/kg	1985 67 CM	MD (0.381)	ND (8.370)	ND (0.360)	ND (0.353)	ND I0.3883	ND (0.356)	ND (0.353)	ND (0.354)	ND (0.387)	ND (0.385)	ND (0.356)	ND (0.358)	ND (0.361)	ND (0.353)	ND (0,379)	ND (0,389)	25
litrobenzene	mg/kg	MD (0.395)	ND (0,331)	NO (0.370)	NO (0.380:	ND (0.353)	ND (0.388)	ND (0.356;	ND (0.358)	ND (0.354)	ND (0.367)	ND (0.365)	ND (0.358)	ND (0.356)	ND (0.361)	ND (0.353)	ND (0.379)	NO (0.369)	7.3
I-Nitroso-di-n-propylamine	mg/kg	NO (0.395)	ND (0.381)	ND (0.370)	HB (0.380)	NG (0.053)	ND (0.388)	ND (0.356)	MD (0,358)	ND (0.354)	ND (0.387)	ND (0.365)	ND (0.358)	MD (0.368)	ND (0,361)	ND (0.353)	ND (0.378)	ND (0.389)	0.0094
I-Nitrosodiphenylamine	mg/kg	ND (0.395)	ND (0.381)	40 (0.370)	ND (0.360)	ND (0.353)	ND (0.068)	ND (0.358)	NO (0.358)	ND (0.354)	NO (0.367)	ND (0.385)	ND (0.356)	ND (0.358)	NO (0.36")	ND (0.353)	ND (0.379)	(988.0) CM	20
Pentachlorophenol	mg/kg	ND (0.989)	ND (0.952)	ND (0.825)	ND (0,800)	NED (C.883)	ND (0.920)	NO 10 8911	(398,0) CIN	ND (0.688)	(619.0) DM	ND (0.814)	ND (6.891)	ND (0.891)	ND (0.904)	ND (0.884)	ND (0.947)	ND (0.923)	5
henanthrene	mg/kg	MD (0.395)	ND (0.381)	NO (0.370)	MD (0.380)	(ESEE D) CM	NO (0.368)	MD (0.356)	ND (0,358)	ND (3.354)	MD (0.367)	ND (0.365)	ND (0.358)	ND (0.358)	NO (0.361)	ND (0.353)	ND (0.379)	ND (0.369)	10,000
Phenol	mg/kg	ND (0.395)	ND (0.381)	NE (0.370)	ND (0.380)	ND (0.353)	NO (0.368)	ND (0.358)	ND (0.368)	MD (0.354)	ND (0.367)	ND (0 366)	NO (0.356)	ND (0.356)	ND (0.381)	ND (0.353)	ND (0.379)	ND (0.369)	200
vrene	mg/kg	ND (0.395)	ND (5.381)	MD (0.370)	MD (0.360)	NO (0.353)	ND (0.368)	ND (3.356)	ND (0.358)	ND (0.354)	ND (0.337)	ND (0.385)	ND (0.356)	ND (0.355)	ND (0.361)	ND (0.353)	46.25°C) GN	ND (0.389)	2,200

Notes:
All results in milligram per kilogram (mg/kg) unless otherwise stated.
All results in milligram per kilogram (mg/kg) unless otherwise stated.

1 Medium-Specific Concentrations (MSCs) were established from the Residential, Used Aquifer with TDS < 2500 MSCs Soil to Groundwater Numeric Values listed in Appendix A, Table 3 and Table 4 of 125 PA Code Section 250, Administration of the Land Recycling Act (Act 2) regulations.

2 ND (0.10) = Parameter not detected at the detection limit specified in parentheses.

3 NO Standard

2 ND (0.10) = Parameter not detected at the detection limit specified in parentheses.

3 NO Standard

2 ND (0.10) = Parameter not detected at the detection limit specified in parentheses.

3 NO Standard

2 ND (0.10) = Parameter not detected at the detection limit specified in parentheses.

3 NO Standard

2 ND (0.10) = Parameter not detected at the detection limit specified in parentheses.

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Dimock Township Susquehanna County, PA

Sample Location Sample Identification Sample Date		Gesford 2/7 G-7-P9B 5/26/2010	Gesford 2/7 G-7-P10A 5/26/2010	Gesford 2/7 G-7-P10B 5/26/2010	Gesford 2/7 G-7-P11A 5/26/2010	Gesford 2/7 G-7-P11B 5/26/2010	Gesford 2/7 G-7-P11C 5/26/2010	Gesford 2/7 G-7-P12A 5/26/2010	Gesford 2/7 G-7-P12B 5/26/2010	Gesford 2/7 G-7-P13A 5/26/2010	Gesford 2/7 G-7-P13B 5/26/2010	Gesford 2/7 G-7-P14A 5/26/2010	Gesford 2/7 G-7-P14B 5/26/2010	Gesford 2/7 G-7-P15A 5/26/2010	Gesford 2/7 G-7-P15B 5/26/2010	Gesford 2/7 G-7-P16A 5/26/2010	Gesford 2/7 G-7-P16B 5/26/2010	SOIL  Residential Used Agulfer MSCs <sup>1</sup>
Parameter	Units																	ridaner meses
General Chemistry Analyses	7 5 6 7 7	ALL STREET	The street		10000	120	THE PARTY OF	S					all Salary	Up to the same	SOM SINE	N Trans	AND PROPERTY.	The Party of the P
Percent Moisture (ASTM D2974-87)	%	9.7	9	9.4	9.9	9.5	10.8	9.5	9.0	11.2	10.6	10.5	10.3	9.1	10.9	10.1	10.2	NS3
Nitrogen, Ammonia (EPA 350.1)	mg/kg	14.7	NO (5.3)	NO (4.8)	5.5	MD (6.2)	NO (5.8)	8.8	NO (5.0:	18.6	ND (5.5)	6.9	NO (4.3)	NO (8.8)	MD (6.6)	5.4	NO (4,5)	1900
MBAS (SM 5540C)	ma/L	NO (0.10)	ND (0.10)	ND (0.10)	ND (0.10)	101:01 GK	NO (0.10)	NO (0:10)	ND (0.10)	NO (0.10)	#D-f0,101	ND (0.10)	NO (0.10)	ND (0.101	ND (0.10)	ND (0.50)	ND (0.10)	NS
Chloride (SM 4500-CI-E)	mg/L	3.5	MD (3.0)	ND (3.6)	10.8\ CM	NO (3.0)	ND (3.0)	NO (3.6)	(0.0) GP/	NO (3.0)	NO (3.0)	NO (3.0)	ND (3.0)	ND (3.0)	ND (3.0)	NO (3.0)	ND (3.0)	NS
Metals Analyses (6010B/7471)	BOOK BO	TOTAL STREET	CO. LEGISLAND S. Tr	MAIN AND A	AND THE PARTY		THE REAL PROPERTY.	THE RESERVE	Marie Land	and Carrier		DESCRIPTION OF THE PARTY OF THE	The same of the sa	150 3000	AND DESCRIPTION OF THE PARTY OF	THE REAL PROPERTY.		CONTRACTOR OF STREET
Aluminum	ma/ka	10,400	14,800	13,600	14,500	13,600	13,600	17,900	13,200	15,300	12,000	15,700	13,500	15,600	14,500	15,000	12,800	190,000
Antimony	mg/kg	ND (0.32)	NO (0.3T	ND (0.34)	NO (0.39)	ND (0.32)	ND (0.35)	ND /0:43	NO (0,37)	0.64	ND (0.33)	ND (0.41)	0.62	NO (0.03)	MD (0.26)	ND (0.37)	ND (0,42)	27
Arsenic	mg/ka	27.5	11.6	12	14.5	19.9	14.5	11.3	15.3	13.6	16.8	20.8	16.9	18.6	18.5	17.5	13.6	12
Barium	mg/kg	427	141	215	164	126	117	176	125	117	133	157	134	183	145	170	145	8,200
Bervilium	mg/kg	0.57	0.9	0.7	0.71	0.76	0.75	0.78	0.73	0.73	0.61	0.89	0.73	0.9	0.83	0.79	0.67	320
Boron	mg/kg	5.8	7.4	6.8	7.3	6	7.4	7.8	6.7	6.6	5.5	7.8	7.5	7.8	7.3	7,1	6.9	1900
Cadmium	mg/kg	0.36	0.44	0.36	0.41	0.37	0.46	0.47	0.39	0.37	0.42	0.39	0.57	0.4	0.56	0.58	0.46	38
Calcium	mg/kg	5,160	1,060	1,610	1,770	1,970	2,040	1,630	1,960	917	1,690	1,420	1,650	2,060	1,940	1,290	1,660	NS
Chromium	ma/ka	12.9	16.4	14.9	16.1	14.4	15.7	17.8	14.4	16.2	12.9	17.7	14	17	15.4	16.9	14	190,0004
Cobalt	mg/kg	13	12.6	12.1	12.3	11.9	11.7	12	12.1	11.2	11.3	13.8	13.9	13 2	13.5	13.1	11.5	50
Copper	mg/kg	12.9	18.1	17.6	14.5	17.8	17.4	17.3	18.2	15.4	15.5	18.5	19	20.3	19	18.2	28	8,100
Iron	mg/kg	21,900	27,200	24,900	28.300	25,700	27.800	25,300	25,500	25,600	23,700	30,200	26,200	30,200	28,100	28,700	25,000	150,000
Lead	mg/kg	35.7	12.8	13.6	13.4	19	13.3	16.6	14.2	18.9	21.6	27.3	25.3	19.2	18.9	26.7	17.5	450
Magnesium	mg/kg	4,570	4,630	4,090	4,620	4,030	4,400	4,370	4,080	4.020	3,850	4,950	4,140	4,910	4,460	4,620	4,030	NS
Manganese	mg/kg	910	804	665	978	772	623	1,450	912	820	810	902	1,230	1,090	1,220	909	630	2,000
Molybdenum	mg/kg	ND (1.3)	NO (1.5)	NO.PLA	- ND (1-3)	WC 71.33	(A.C. CH)	NO /1.9	ND (1,5)	NO (1.8)	NO (12.3)	ND (1.5)	MD (2.1)	MD (1.3)	ND (1.2)	ND (1.5)	NO M.T)	650
Nickel	mg/kg	20.8	24.2	21.2	25.6	22 7	22.8	24.4	23.3	21.8	21	26.7	24.7	26 5	26.3	26.2	21.5	650
Potassium	mg/kg	1,300	1,930	1,710	1,600	1,780	1,720	1,940	1,690	1,500	1,380	1,670	1,810	1,690	1,680	1,510	1,420	NS
Selenium	mg/kg	ND (0.32)	MD (0.37)	NO (0.34)	NO 10.391	ND (0.32)	ND (0.35)	134 0) Qid	NO 10.37	PID (0.48:	ND (0.33)	NO (0,41)	NO 16 531	ND (0.33)	ND 10.29	ND 10.371	NO (0.42)	26
Silver	mg/kg	0.73	0.84	0.78	0.94	0.58	0.93	0.87	0.65	0.64	0.46	0.79	0.75	0.77	0.75	0.88	0.82	84
Sodium	mg/kg	ND (302)	MD (355)	ND /3451	N(D) (32)	MD (351)	NO 14355	NO 14861	138E) OK	NO (452)	NO /326	NO 74051	ND (528)	NO /3011	ND (289)	NG (371)	MD (405)	NS
Thallum	mg/kg	ND 11.3	MD (1.5)	MOTIVAL	NO 4131	202131	NO IS do	ND (1.9)	ND (1.5)	NO 11.81	VIG (1.3)	ND 14.31	NO (2.1)	(E, 2) CM	NO (1,2)	ND (1.5)	MENT	14
Vanadium	mg/kg	11.9	16.1	15.9	16.9	15.3	15.8	19.7	14.8	18.2	13.3	17.5	15.1	17.6	16.4	16.7	14.8	1,500
Zinc	mg/kg	57.9	69.5	70.1	70.6	67.3	72.2	75.2	65.3	67	72.2	74.1	74.8	73.7	70.2	73.1	69.5	12,000
Mercury	ma/ka	NO /0.15	NO (0.11)	NO (C.19)	NG (5.10)	PID 10 111	NO 10,111	MC (0.11)	NO.46 101	NO 10, 111	NO 10. 145	NO 10 11	MD (0.111)	NE 10 10.	MD 3 111	MD (0.11)	AD COURT	10

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Dimock Township Susquehanna County, PA

Sample Location Sample Identification Sample Date		Gesford 2/7 G-7-P9B 5/26/2010	Gesford 2/7 G-7-P10A 5/26/2010	Gesford 2/7 G-7-P10B 5/26/2010	Gesford 2/7 G-7-P11A 5/26/2010	Gesford 2/7 G-7-P11B 5/26/2010	Gesford 2/7 G-7-P11C 5/26/2010	Gesford 2/7 G-7-P12A 5/26/2010	Gesford 2/7 G-7-P12B 5/26/2010	Gesford 2/7 G-7-P13A 5/26/2010	Gesford 2/7 G-7-P13B 5/26/2010	Gesford 2/7 G-7-P14A 5/26/2010	Gesford 2/7 G-7-P14B 5/26/2010	Gesford 2/7 G-7-P15A 5/26/2010	Gesford 2/7 G-7-P15B 5/26/2010	Gesford 2/7 G-7-P16A 5/26/2010	Gesford 2/7 G-7-P16B 5/26/2010	SOIL Residential Used
Parameter	Units																	Aquifer MSCs1
VOCs (8260)	100	Commence of the		AT A WATER	Appelle Lines	and a second	Carlos de Servicio			Committee of the Commit	April 18. E. S.	Street Plant		THE REAL PROPERTY.	Section 1	O Kent Lake	Tarana Para Ing	
1.1.1-Trichloroethane	ma/ka	ND (0.0041)	ND /0.00451	ND (0.0054)	NO (0,0054)	14400.0) GM	NO (0.0080)	ND (0.0049)	ND (0.0053)	ND (0.0056)	(0.000.0) CM	NO (0.0687)	ND (0.0043)	NO (0.0084)	MD (0.0039)	NO (0.0050)	ND (0.0048)	20
1,1,2,2-Tetrachloroethane	mg/kg	NO 10.00411	NID (0.0046)	MD (0.0084)	ND (0.0054)	ND (0.0044)	ND (0.0080)	NO (0,0049)	(0.0053)	MD (0.0088)	MD 10.00901	NO (0.0087)	NO (0.0042)	160 (0.0054)	ND (0.0639)	MD (0.0050)	NO (0.0048)	0.08
1.1.2-Trichloroethane	mg/kg	MD (0.00411)	ND (0.0043)	MD (0.0084)	NO (0.0054)	ND (0.004#)	ND (0.0080)	ND (0.0048)	ND (0.0053)	ND (0.0058)	ND (0.0090)	NO 10,00671	ND (0.0042)	ND (0.0054)	(800000) DIV	ND (0.0050)	ND (0.0048)	0.5
1,1-Dichloroethane	mg/kg	NO 10 00411	MD (0.0048)	ND (0,0054)	ND (0.0054)	(PP (0.0044)	ND (0.0080)	NO (8,0049)	ND (0.0053)	ND (0.0058)	(0900.01 GW	NO (0.0037)	NO (0.0042)	ND (0.0064)	MD (0.0039)	10800.01 GH	ND (0.0048)	3.1
1,1-Dichloroethene	mg/kg	ND (0.0041)	ND (0.0045)	MD (0.0054)	NO (0.0064)	ND (0,0044)	ND (0.0080)	NO (0.0049)	ND (0.0053)	ND (0.0053)	ND (0.0090)	ND (0.0087)	MD (0.0042)	MD (0.0054)	ND (0.0039)	NO (0,0050)	(840C:0) OM	0.7
1,2,4-Trimethylbenzene	mg/kg	NO (0.0041)	ND (0.0048)	ND (0.0054)	NO (0,0054)	ND (0,0044)	(0.0080)	MD (0.0049)	NO (0.0063)	13800.0) GM	MD (0.0090)	NO (0.0067)	ND (0,00/42)	NO (0.9054)	NO (0.0039)	ND (9.0050)	ND (0.0048)	8.4
1,2-Dichlorobenzene	mg/kg	NO 10.00411	MD (0.0048)	MD (0.0054)	ND (0.9054)	ND (0.0041)	ND (0.0080)	NO (0.0049)	MO (0.0053)	ND (0.0055)	MD (0.0090)	ND (0.0087)	NO (0.0042)	ND (0.0054)	ND (0.0039)	ND (0.0050)	ND (0.0048)	60
1,2-Dichloroethane	mg/kg	MD (0.0041)	MD (0.0048)	ND (0.0054)	NO (0.0054)	(APC010) CIR	ND (0.0080)	ND (0.0049)	18300.0) OM	ND (0.0053)	MD (0.00901	NO (0.0087)	ND (0,0042)	NO (0.0054)	MD (0.0038)	NO (0.0050)	ND (0.0048)	0.5
1,2-Dichloroethene (Total)	mg/kg	ND (0.0081)	ND (0.0092)	ND (0 oros)	NO (0.0108)	ND (0.0088)	ND (0.0159)	(9900.0) GM	NO (0.0108)	NO (0.0112)	NG (0.0180)	ND (6,0134)	ND /0.00851	NO (0.0107)	ND (0.0078)	(0.010.0) DIV	ND (0.0098)	75
1,2-Dichloropropane	mg/kg	NO (0.0041)	ND (0.0046)	ND (0,0054)	MD (0.0054)	ND (0.0044)	ND (0,0080)	NO (0.0049)	NO 10,00531	ND (0.0058)	NO (0.0090)	NO (0.0087)	ND (0.0042)	MD (0.0054)	MD (0.0039)	(0.0060) OM	MD (0.0048)	0.5
1,3,5-Trimethylbenzene	mg/kg	NO (0.0041)	ND (0.00 65)	NO (0.0064)	HD (0.0054)	ND (0.0044)	ND (0.0080)	NE /0.00491	ND (0.0063)	ND (0.0066)	(GCCCC) GIN	ND (0.0067)	HD (0.0042)	(A600.0) GM	NO 10,00391	HD (0,0050)	NO (0.0048)	2.3
1,3-Dichlorobenzene	mg/kg	ND (0.0041)	MD (0,0043)	ND (0.0054)	ND (0.0054)	ND (0.0044)	ND (9.0080)	(BN00,0) DIK	ND (0.0053)	MD (0.0058)	NO (0,0090)	ND (8.0057)	(Sh00,0) GM	MD (0,0054)	MD (0.0039)	MD (0.0050)	MD 13.00481	61
,4-Dichlorobenzene	mg/kg	ND (0.0041)	ND (0.0045)	ND (0.0054)	ND (0.0054)	ND (0.0044)	10800.0) Gift	ND (0.0049)	ND (0.0053)	ND (0.0053)	(0.0090) GM	NO (0.0087)	MD (0.0042)	NO (0.0064)	MD (0.0039)	ND (0.0050)	XID (0.0048)	10
2-Butanone (MEK)	mg/kg	ND (0.0031)	ND (0.0082)	(6C10.0) CIM	(8010.6) DM	(SS00.0) OM	ND (0.0159)	ND (0.0089)	NO (0.0108)	ND (0.0112)	ND (0.0180)	MO (0.0134)	ND (0,0085)	MD (0.0107)	NO (0.0078)	MD (0.0100)	(8900.01 CM	400
2-Hexanone	mg/kg	ND (0.0081)	MEI (0.0092)	ND (0.0108)	NO (3.0108)	(3800.0) CH	NO (0.0159)	NO (0.0098)	ND (0.0108)	ND (0.0112)	ND (0.0180)	ND (0.0134)	MD (0,0086)	ND (0.0107)	MC 10 00781	MD (0.0100)	ND (0.0098)	1.1
I-Methyl-2-pentanone (MIBK)	mg/kg	ND (0.0001)	ND (0.0092)	ND (9.0108)	ND (0.0108)	ND (0.0088)	ND (0.0159)	ND (0.0098)	ND (0.0108)	NO (9.0112)	(0870.0) CM	ND (0.0134)	NE 70,00851	NO (0,5157)	MEX (0,0073)	ND (0.0100)	ND /0.00981	290
Acetone	mg/kg	0.127	0.0283	0.0216	0.0941	0,015	0,0312	0.0302	0.017	0.0363	0.0336	0.0385	0.0115	0.0455	0.0188	0.0454	0.0146	3300
Benzene	mg/kg	ND (0.9841)	ND (0.0048)	ND (0.0054)	MD (0.0064)	MD (0.0044)	ND (0.0080)	ND (0.0049)	NO (0.0053)	ND (0,0055)	10600°C GN	NG 10,3087)	AID (0,0042)	MD 10,00641	ND (0.0038)	ND (0.3050	NE 10,00481	0.5
Bromodichloromethane	mg/kg	NEI (0.0041)	ND (0.0048)	ND (0,0054)	ND (0,0054)	ND (0,0044)	ND (0,0080)	ND (0.0049)	ND (0.0063)	NE (0.0038)	MD (0,0090)	MD (0.0987)	ND (0.0042)	NID (0,0054)	MD (0.0000)	MD (0.0060)	ND (0.0048)	8
Bromoform	mg/kg	NO (0.00#11	ND (0.0048)	ND (0.0056)	NO (0.0054)	ND (0.0044)	MD (0.0080)	ND (0.0049)	MD (0.0053)	ND (0.0058)	(C800.03 DM	NO (0.0067)	MD (0.0042)	ND (0.0054)	ND (0:0039)	MD (8.0350)	MD (0,0048)	8
Bromomethane	mg/kg	ND (0.0041)	NO (0.0048)	MD (0.0054)	ND (0.0054)	MO (0.0044)	ND (0.0080)	ND (0.0049)	MD (0.0058)	ND (0,0058)	HD (0.0090)	MD (0,0087)	MD (0.0042)	ND (0,0054)	ND (0,0039)	NO (0.0050)	ND-10.00481	11
Carbon disulfide	mg/kg	0.0327	ND (0.0048)	ND (0.0054)	NO 70,3064)	MD (0.0044)	MD (0.0080)	ND (0.0849)	MD (0.0053)	NO (0.0058)	NO 10,00901.	NO /0.00871	ND (0.3042)	NO 10,00841	NO 10,0039)	ND (0.0050)	ND (0.0048)	150
Carbon tetrachloride	mg/kg	ND (0.0041)	ND (0.0648)	NO (0.0054)	ND (0.0054)	MD (0 0044)	ND (0.0080)	NO (5,0048)	ND (0.0053)	ND (0.0055)	MD (0.0090)	MD (0.0057)	MD (0.0042)	MD 10,00841	18608,01 OH	IND (0.0050)	MD fo.00481	0.5
Chlorobenzene	mg/kg	ND (6.0041)	AD (0.0048)	MO (0.0054)	NO (0.0064)	ND (0.0044)	ND (0.0080)	(BM00,0) C/A	ND (0.0053)	NO 70,0066	ND (0.0096)	MO (0.0087)	HO (0.0042)	NO (0.0054)	NO (0.0039)	MC (0.0030)	ND (0,0048)	10
Chloroethane	mg/kg	ND (0.0041)	NU (0.0046)	NO (0.0054)	ND (0.0054)	ND (0,0044)	10800.03 GM	NC (0.0049)	NO (0.0053)	ND /0.0055	MD (0.0090)	NO (0.0087)	ND (0,0042)	MD (0.005#1	NO (0.0030)	ND (0.0050)	NO (0.0048)	23
Chloroform	mg/kg	4D (0.00AT)	ND 10.9048,	NO 10,0054)	NO (0.0054)	ND (0.0044)	MO (0.0080)	(4D (0.0049)	NO (0.0053)	ND (0.0058)	(4D (0.00901	NO (0.0067)	NO (0.0042)	ND (0.0054)	ND (8,0038)	No (3,3060)	ND (0.0048)	8
Chloromethane	mg/kg	ND (0.0041)	ND (0.00×8)	ND (0.0034)	NO 10,00541	ND (0.09±4)	PHD 10.00601	MU (0,0049)	ND (0.0053)	ND (0.0058)	MD (0.0090)	NO (0.006T)	ND (0.0042)	ND (0.0064)	ND (0.0009)	1(0 (0,0050)	ND (0.0049)	3
cis-1,2-Dichloroethene	mg/kg	ND (0.0041)	ND (0,0048)	ND (0.0064)	NO (0.0054)	ND (0.0046)	MD (0.0080)	ND (0.00×8)	NO (0 0063)	MD (0.0053)	NO (0.0090)	NO (0.0087)	HD (0:0042)	ND (G,8054)	MD (0.0039)	ND (0.0050)	NO /0.00481	7
cis-1,3-Dichloropropene	mg/kg	NO (0.0041)	NO (0.0046)	ND (0.0054)	NIC (0.8054)	(LA00.0) CIN	10800.01	NO (0.5649)	NO (0.0053)	NO (0.0058)	ND (0.0090)	NO (0.0087)	ND (0.0042)	ND (0.0052)	NE 10,00391	NO (0.0050)	MD 10.00481	0.66
Dibromochloromethane	mg/kg		ND (0,0048)	ND (0.0054)	MD (0.0054)	NO (0.0044)	MD (0.0080)	ND (0.0049)	MD /0.00531	NO (0,0065)	NO (0,0090)	MC 10 30670	NO 10,00421	ND (0.0054)	NO 18 00391	(0800,0) 04	ND /6.00481	8
Ethylbenzene (Common)	mg/kg mg/kg	NO (0.0041)	ND (0.0046)	ND (0.0054)	ND (0,0054)	ND (0.0044)	ND (0.0080)	NO (0.0049)	NO (0.0053) NO (0.0053)	NC (0.0058)	MD (0.0090)	NO (0.0087)	NO (0.0042)	ND (0.0054)	NO 10.00381	(0.0050) GM (0.0050)	NO (0.0048)	70 600
sopropylbenzene (Cumene)	14 14	ND (0.0091)	Car (5) 55 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	110 (0,00051	NO 70,0108)	140 10,004-1	1/2 (2.0450)	11000000		ND (0.0055)	The second second	The second secon						
n&p-Xylene	mg/kg	MD (0.0051)	NO (0,0031)	NE (0,0108)	NO (0.005s)	24D (0.0088)	ND (0.0150)	MC (0.0089)	MD (0.0108)	ND (0.0112)	NO (0.0180)	NS (0.0134)	MD (0.0035)	NE (0.6107)	MD (0.0078)	NO (0.0100)	MD (0,0096)	1,000
Methylene Chloride	mg/kg	ND (0.0041)	(8400.0) GM	ND (0.0064)	NO 10.00641	NO (0.0044)	ND (0.0080)	NO 10,06491	NO 10,00531	MD (0.0058)	NO (0.0000)	NO 10 0067)	MD (8.3042)	NO (0.0054)	ND 10,06381	ND (0.0050)	AID (5.3048)	0.5
Methyl-tert-butyl ether Naphthalene	mg/kg mg/kg	NO (0.0041	NO 10.0048	NO (0,0064)	NO (0.0054)	10.000E	ND (0.0086)	HD (0.0048)	ND 10.0063	NO 10,00561	NO (0.0090)	NO (0.0087) NO (0.0087)	NO (0.0042) NO (0.0042)	ND (0.0054) ND (0.005=)	ND (0.0039)	NO 10.0000	ND 79,00481 NC-19,00481	25
n-Butylbenzene	mg/kg	NO (0.0041)	AID ID ACAS	MC (0.0054)	ND (0.0054)	10 to 10 10	NO 10 0000	NC (0.0048)	ND (0.0083)	MD (0.0058)	ND -2 00901	VID (0.0067)	MO (0.0042)	NE (0.0054)	MD 10 03881	110 (0.0000)	NO 10 00481	950
n-Propylbenzene	mg/kg	ND (0.3541)	NO (0.0048)	ND (0.0066)	NED (0.0084)	MD (0.3046)	PED (0.0080)	NO (2.3049)	NC (0.0063)	MO (0.0068)	710 10.00801	207 (2.0067)	MO 10 00421	NO 10 DOEAL	NO (C cosa:	NO 10 00601	ND 10.30481	290
-Xvlene	mg/kg	NO (8,0041)	ND 10 0048	217 10 00 30	ND (0.0054)	2/D (0.0044)	ND (0.0080)	MD (0.0049)	NE (0.0053)	HD 10-0000	NO 15 00001	ND (6.3087)	MD (0.0042)	240 (0.0084)	ND (0.0088)	ND (0.0050)	ND 10.00481	1.000°
o-Isopropyltoluene	mg/kg	NO (0.0041)	ND (0.0048)	NO 10,00841	NO (3.3354)	NO 10 0846	NE (0.0030)	AG (0.0049)	MD (0.0053)	AD (0.0055)	ME (0.0090	NE 10 00971	MC 10 (0)=01	MD 10 00541	ND 10 0038	MO (0.0000)	18a0C (0 GV	NS
sec-Butylbenzene	mg/kg	MD (0.0041)	NO (0.0046)	AID 20 00541	NO 10.0064	ND (0.30=4)	hip (0.0000)	NO 0.3048	NO 10.0053	ND (4.0055)	MD (0.0080)	NO 10 00871	AID (0.00-2)	he) (C 0054)	ND 10,0036	NO 10 35601	NET (0.0048	350
Styrene	mg/kg mg/kg	NO 10,0041	NO 10 00461	NO 10 00 541	NO 10.00541	NED 10 COV.	NO 15 3000	NO COURS	3/0 /0.0003	NO 10 2000	00/00000	NO 10 300	AST ID COLORS	NG 70.00841	760 (0.0000)	NO SC DOSO	#17 76 00 (N)	24
Fetrachloroethene	mg/kg	NO 10-064*1	MD (0.0045)	NO 15 00541	1/0 10 0054	NO (0.33-4)	NEW CORRECT	NO 10 00 481	ND 10 0033	NOT TO DOGGO	NIS FOLLOWS	NC 10,68511	10 10.00421	ND 13 30561	ND 0 0039	ND (0 Mag)	NO 10 0048	0.5
Foluene	mg/kg	NC (3.004)	ND (0.0048)	NU (0.0034)	NO (C.OCSA)	ND-10-00484	NO.10.30801	VD (0.0048)	NO (0.0063)	ARD 19.50681	ND f0.0090	NC (0.0057)	WD (0.0042)	ND -3.0684	NO 10.00391	NO (0.0050	NO (0 0048)	100
FOTAL BTEX	ma/kg	34D (0.0344)	ND (0.02771	ND (0.0324)	NO 10.0324	WD (0.3263)	NC 10.00001	ND (0.0296)	MO 10.00518	ND 10.00335	ND (0.05-01)	NO 10.000371	ND -0.025/0	NO 10 03231	MD (0.0235)	140 (0.00001	MD (0.0088)	NS
rans-1,2-Dichloroethene	mg/kg	NO 10 10011	NE (C 0048)	VO 10 00841	MO (5.0058)	MD 63 0044	140 10 00803	AT (C. 2040)	ND (0.0053)	WE RE DOOR	NO (0.0090)	NO 10 2027)	860 (0.004.01	NO 10 20541	ND 10.0000)	ND (0.0080)	MD (0.0038)	10
rans-1,3-Dichloropropene	ma/ka	NO.10.30411	NO 10 00481	NO 10 00541	NG (0.3054)	NO 10 0044	MD 45 DOBD	AID OLDOLOG	ND 10 0053	ALT NO DOSE	NE (3.0090)	V2 62 5525	NO 10 0042	MC (C 2054)	ND 16 0039	NO (5.0050)	ND 10 3048.	0.66
richloroethene	mg/kg	NITS (D. 3024)	No in anasi	NE IN MASA	MC (8.0054)	WEST COLOR	NO /3 0083	MD (0.3049)	20 70 0050	N.C (0.0035)	(0800:01 CM	NO 70.5087	MD (1) (0) = (0)	170 /0 00521	MD 13,03391	AID (0.0050)	NG 2.2048	0.5
/inyl chloride	mg/kg	ND 03041	NO (0.0648	NO (0.5054	7m7 (0.0084)	NO 10 COM	NO 10,0080	ND /3 70/49	MD 10.0053	NO (0.0068)	JRC (0.0000)	MO 10 00671	WD 10 30431	NO 10 20541	NO 10 00391	NC (0.0080)	MD (0.0045)	0.5
(ylene (Total)	mg/kg	NO (6 0122)	NO 10 01381	AIR 20 0 22	10 (0.0162)	ND (0.01021	SID (2.3000)	NO 10 31 291	ND (0.0158)	115 /4 0 / 05	10 0007	145 (0.0251)		1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T	10000000	ND (0.0160)	NO COSSE	1,000

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Dimock Township Susquehanna County, PA

Sample Location Sample Identification Sample Date		Gesford 2/7 G-7-P9B 5/26/2010	Gesford 2/7 G-7-P10A 5/26/2010	Gesford 2/7 G-7-P10B 5/26/2010	Gesford 2/7 G-7-P11A 5/26/2010	Gesford 2/7 G-7-P11B 5/26/2010	Gesford 2/7 G-7-P11C 5/26/2010	Gesford 2/7 G-7-P12A 5/26/2010	Gesford 2/7 G-7-P12B 5/26/2010	Gesford 2/7 G-7-P13A 5/26/2010	Gesford 2/7 G-7-P13B 5/26/2010	Gesford 2/7 G-7-P14A 5/26/2010	Gesford 2/7 G-7-P14B 5/26/2010	Gesford 2/7 G-7-P15A 5/26/2010	Gesford 2/7 G-7-P15B 5/26/2010	Gesford 2/7 G-7-P16A 5/26/2010	Gesford 2/7 G-7-P16B 5/26/2010	SOIL  Residential Used Aquifer MSCs <sup>1</sup>
Parameter	Units																	Aquiter moos
SVOCs (8270)		S COLUMN TO SERVICE	SHIP STATE			THE PERSON NAMED IN	EVEN BOOK		から 日本			THE PERSON NAMED IN		CONTRACTOR OF	CARLES DE			Market Street
1,2,4-Trichlorobenzene	mg/kg	ND (0.352)	ND (0.357)	ND (0.336)	ND (0.387)	ND (0.388)	MD (0.371)	MD (0.388)	NO (0,357)	ND (0.334)	ND (0.364)	ND (0.383)	MD (6,353)	ND (0.382)	ND (0.370)	ND (0.330)	ND (0.382)	27
1,2-Dichlorobenzene	mg/kg	ND (0.362)	AID (0.357)	ND (0.388)	(786.5) QM	MD (0.088)	NO (0.374)	ND (0.363)	ND (0.357)	NO (0.384)	ND (0.384)	ND (0.383)	ND (0.389)	ND (0.382)	ND (0.370)	NO (0.380)	NO (0.382)	60
1.3-Dichlorobenzene	mg/kg	NO (0.362)	ND (6.357)	ND (0.388)	NO (0.367)	ND (0.356)	ND (0.371)	MD (0.388)	ND (0.357)	ND (0.334)	ND (0.394)	MD (0.390)	ND (0.383)	ND (0.352)	NO (0.370)	ND (0.380)	HO (0.382)	61
1,4-Dichlorobenzene	mg/kg	ND (0.382)	ND (0.357)	ND (0.368)	NG (0.387)	NO (0.386)	ND (0.371)	MD (0.383)	MD (0.357)	riD (0.384)	ND (0.354)	MD (0.383)	ND (0.393)	NO (0.382)	ND (0.370)	ND (0.350)	NO 10.382	10
2,4,5-Trichlorophenol	mg/kg	NO (0.905)	ND (0,892)	ND (0.916)	ND (0.813)	NO (0.515)	ND (0.928)	ND (0.921)	ND (0.892)	ND (0.811)	ND (0.910)	ND (0.907)	NC (0.909)	NO (0.205)	ND (0.925)	(0.90C) CHI	MD (0.907)	2,300
2,4,6-Trichlorophenol	mg/kg	NO (0,382)	ND (0.357)	ND (0.383)	NO (0,387)	ND (0.368)	ND (0.371)	NO (0.388)	ND (0.357)	ND (0.384)	NO (0.384)	ND (0.363)	ND (0.363)	ND (0.332)	ND (0.370)	ND (0.380)	NO (0.382)	11
2,4-Dichlorophenol	mg/kg	NO 10.3821	NO (0.357)	ND (0.388)	ND (0.387)	MD (0.368)	ND (0.371)	ND (0.368)	ND (0.357)	MD (0.364)	MET (0.354)	ND (0.363)	ND (0.383)	ND (0.362)	ND (6,370)	ND (0.360)	MD (0.332)	2
2,4-Dimethylphenol	mg/kg	MD (0.362)	ND (0.357)	ND (0.335)	PID (0.387)	MD (0.366)	ND (0.374)	MD (0.368)	ND (0.357)	ND (0.384)	ND (0.384)	ND (0.353)	ND (0.363)	ND (0.362)	MD (0.370)	ND (0.360)	ND (0.352)	73
2,4-Dinitrophenol	mg/kg	ND (0.905)	ND (0.892)	MD (0.916)	ND (0.918)	MD (0.915)	ND (0.928)	MD (0.921)	NO (0.892)	NG (0.911)	ND (0.910)	MD (0.907)	MO (0.909)	ND (0.905)	ND (0.926)	(0.900) DIA	ND (0.907)	7.3
2,4-Dinitrotoluene	mg/kg	AC (0.382)	ND (0.357)	ND (0.388)	NO (9.387)	ND (0.388)	NO (0.371)	MD (0.368)	ND (0.367)	NO (0.384)	NO (0.364)	NO (0.363)	ND (0.383)	ND (0.362)	NO (0.3T0)	ND (0.380)	NO (0.352)	0.21
2,6-Dinitrotoluene	mg/kg	HD (0.382)	MD (0.357)	ND (0.365)	ND (0.337)	MC1 (0.388)	ND (0.371)	ND (0.368)	ND (0,357)	ND (0.384)	ND (0.354)	NE (0.383)	MD (0.383)	NO (0.362)	ND (0.370)	ND (0,350)	MD (0.382)	3.7
2-Chloronaphthalene	mg/kg	NO (0.382)	MD (0.357)	MD 10.388	NO (0.367)	ND (0,388)	ND (0.371)	MD (0.353)	MD (0.357)	(488.0) GM	ND (0.384)	HD (0,383)	ND (0.383)	PID (0.382)	ND (0.370)	NO (0.380)	ND (0.362)	6,200
2-Chlorophenol	mg/kg	ND (0.382)	MD (0.357)	ND (0.385)	ND (0.387)	ND (0.388)	ND (0.371)	NO (0.383)	ND (0.357)	MD (0.334)	ND (0.334)	MD (0.363)	ND (0,363)	MD (0.352)	ND (0.370)	MD (0,360)	MD (0,352)	4.4
2-Methylnaphthalene	mg/kg	ND (0.362)	NO (0.387)	MD (0.036)	ND (0.387)	(85C.01 GM	ND (0,371)	(866.6) GM	MO (0.357)	ND (0.364)	ND (0.364)	ND (0.363)	NO (0.383)	ND (0.362)	MD (0.370)	NO (0.360)	ND (0.362)	600
2-Methylphenol(o-Cresol)	mg/kg	ND (0.332)	ND (0.357)	MD (0.368)	NO (0.367)	NO 70 3861	ND (0.371)	MD (0.388)	ND (0.357)	ND (0.384)	MD (0.354)	ND (0.383)	MD (0.393)	MD (0.352)	ND (0.370)	MD (0.380)	ND (0.882)	180
2-Nitroaniline	mg/kg	ND (0.305)	ND (0.892)	ND (0.916)	ND (0.915)	MD 10.916	KD (0.928)	ND (0.924)	ND (0.892)	ND (0.911)	MD (0.940)	ND (0.907)	ND (0.909)	ND (0.905)	ND (0.929)	MD (0.900)	MD (0.907)	11
2-Nitrophenol	mg/kg	NO (0.382)	MD (0.357)	ND (0.386)	NO (0.387)	ND (0.386)	ND (0.371)	ND (0.388)	ND (0.357)	ND (0.384)	NO (0.384)	ND (0.353)	ND (0.363)	ND (0 362)	ND (9,370)	NO (0.350)	ND (0.352)	29
3&4-Methylphenol(m&p Cresol)	mg/kg	NO (0.723)	ND (0.713)	NO (0.733)	MA (0.734)	ND (0.732)	NO (0.742)	ND (0.738)	(817.0) GM	NO (0.728)	NO (0.727)	ND (0.725)	NO 10 7271	NO (0.728)	ND (0.740)	NO 10,7201	ND (0.725)	18 <sup>7</sup>
3,3'-Dichlorobenzidine	mg/kg	ND (0.362)	MD 70.387]	NE/10.3561	ND (0.367)	MD (0,353)	MD (0.371)	ND (0.368)	ND (0.357)	ND (0.384)	MD (0.384):	ND (0,363)	ND (0.383)	NO (0.352)	NO (0.370)	ND (0.360)	NO (0.382)	8.3
3-Nitroaniline	mg/kg	NO (0.906)	ND (0.882)	MD (0.913)	ND (0.813)	MD (0.818)	ND (0.928)	MD (0.821)	ND (0.892)	NO (0.911)	ND (0.910)	ND (0.907)	1606.0J CM	MD (0.905)	(828.0) QM	MD (0.900)	NO (0.807)	1.1
4,6-Dinitro-2-methylphenol	mg/kg	MD (0.906)	NO (0.892)	MO (0.918)	ND (0.918)	ND (0.815)	NO (0.928)	ND (0.921)	NO (0.892)	ND (9.841)	1019.01 GM	ND (0.907)	ND (0.909)	NO /0.905)	PID (0.928)	(0.900) CH	ND (0.907)	0.37
4-Bromophenylphenyl ether	mg/kg	NO 70,3623	NO (0.357)	NO (0.363)	ND (0.367)	ND (0.388)	NO 10.3711	ND (0.388)	ND (0.357)	ND (0.364)	ND 10.3621	NO (0.383)	ND (0.383)	ND (0.382)	NO (0.370)	ND (9.360)	NO 10.3821	NS
4-Chloro-3-methylphenol	mg/kg	MD (0.362)	MEI (0,057)	ND (0.358)	ND (0.387)	NO (0.356)	NO (0.371)	MD (0.3881	MD (0.357)	MD (0.364)	MD 10.3541	ND (0.363)	ND (0.385)	ND (0.332)	NO (0.370)	MD (0.360)	NO (0.382)	37
4-Chloroaniline	mg/kg	NO (0.382)	ND 10:357	NO (0.388)	NO (0.387)	ND (8 358)	NO (0.374)	ND (0.368)	ND (0.357)	ND 70,3841	NO (0.384)	ND (9 383)	MD (0.383)	NO (0.382)	ND (0.370)	NO (C.360)	ND (0.382)	0.42
4-Chlorophenylphenyl ether	mg/kg	MO (0.382)	NO (0.357)	ND 19 388	NE (0.387)	ND (9.385)	140 (0.371)	14.0 (0.388)	MD (0.357)	NO (0.384)	NO (0.384)	NO (0.083)	NO 70.3531	NO 10,3821	MD (0.370)	NO (2.380)	NE (0.3821	NS
4-Nitroaniline	mg/kg	NO (0.908)	MD (0.882)	NO (0.915)	S18.03 QW	PED (C.8:3)	MO (0.928)	NO 0.9213	1268.01 DM	ND (0.211)	ME (0.910)	MC (0.607)	NO (0.909)	ND (0.905)	ND (0.928)	NE (0.900)	NC (0.967)	3.3
4-Nitrophenol	mg/kg	NO (0.362)	MD (0,357)	MD (0.368)	NO (0.387)	NO (0.366)	NID (0.374)	ND (0.368)	ND (J.357)	ND (0.384)	NO (0.364)	NO (0.383)	MD (0.363)	MO 10.3821	MD (0.370)	niD (0.360)	AC (0.362)	6
Acenaphthene	ma/ka	MD (0.082)	ND (0.357)	285 01 OK	NO 10,3871	MD (0.365)	ND (0.371)	MD (C 388)	ND (0.357)	MS: (0.384)	NO (0.084)	NO (0.353	ND (0.383)	ND 10 3821	ND (0.370)	ND 10.380	ND (0.362)	2,700
Acenaphthylene	mg/kg	MD (0.382)	NO 68,3671	AD (0.335)	NO (0.387)	MD. (0.388)	ND (0.371)	MD (0.388)	ND (0.357)	MD 40.3841	NO (0.384)	MD (0.383)	ND (0.383)	NO 10.382	NO (0.378)	*(0.10.380)	NO (0.382)	2,500
Anthracene	mg/kg	HC 10.3621	ND (0.367)	ND /0.368	NO (0.36**	ND (0.356)	MD (0.071)	MD 70 0881	NO (0.357)	MD 10 3841	MC (0.384)	NO (0.363	MD /6.3631	NO 70.3621	ND 10.370	(40 70,380)	MO (0.380)	350
Benzo(a)anthracene	mg/kg	NO 10:3821	ND (0.357)	NG (0.368)	ND (0.367)	ND (C 358)	ND (0.37")	ND (0.388)	ND (0.357)	NE (0.384)	NO (0.384)	NO (0.363)	MD (0.353)	NO 10 383:	PID (0.379)	ND (0.380)	ND (0.382)	5.7
Benzo(a)pyrene	mg/kg	ND (0.363)	NED (0.357)	NG 10,3961	ND (0.987)	ND (0.366)	NO (0.37%)	ND (0.386)	NO (0.357)	742 (0.084)	MD (0.384)	NO /0.3831	1536.0) CM	NO (0.382)	ND 10.8761	NO (0.385)	NO 10,3821	0.57
Benzo(b)fluoranthene	mg/kg	ND (0.382)	ND (0.357)	NO 10,3861	NO (0.387)	MD 10.3881	NO (0,371)	NE (0.388)	NO (0.357)	ND (0.384)	NO (0 364)	ND (0.3831	MD (0.363)	NO (0.382)	Ma (0.370)	NO 10.3801	NC 10,3621	5.7
Benzo(g.h,i)perylene	ma/kg	NO (0.982)	ND (0.387)	MC 45 3881	MD 10,3871	MCI (0.368)	ND (0.371)	ND (0.386)	ND (0.367)	ND (0.384)	MO 10.3541	ND (0.363)	MD (0.383)	ND (0.382)	ND (0.370)	MD (0.360)	MD (0.352)	180
Benzo(k)fluoranthene	mg/kg	NO (0.382)	NO (0.357)	PID (0.388)	ND 10, 387	HO (0.388)	ND (0.374)	ND /0.368	MD (0.357)	NO (0.384)	NO 10 3341	ND (0.383)	ND (0.383)	ND (3.362	#ID (€.370)	ND (0.380)	NO 10,362	57
Benzyl alcohol	mg/kg	ND (0.382)	ND 10.3571	NO.0.388;	ND f0.387	1880.01 CW	ND (0.371)	MD (0.338)	NO (0 3571	ND 10.3841	NC 70, 3841	NO 10.3831	ND (0.383)	MD 9 362	ND (0.370)	NO 10.980	ND (0.352)	1,800
bis(2-Chloroethoxy)methane	mg/kg	NC 10 382	ND (0.35T)	NO 10.388	ND 10.357	ND (0.358)	PID (0.375)	MD 40,3681	- NO (0.357)	MD (0.384)	MD 10.3641	ND 10.3631	NE (0.363,	NO (0,382)	NO (0.370)	ND (0.380)	ND (0.362)	11
bis(2-Chloroethyl) ether	mg/kg	ND (0.382)	ND 10.3571	MD (0.388)	7(0,10,387)	HD (0.388)	ND (0.371)	NO (0.388)	MO 10.3571	NO (0.354)	MD (0.384)	NO /0.3631	NO 10.360+	NO 16.3321	hiD (0.370)	ND 50 3561	MD 40.352	0.015
bis(2-Chloroisopropyl) ether	mg/kg	ND (0.382	ND (0.0571	MD (0:388)	NO (0:38T)	NE 10 366	ND 10,3711	ND (0.383)	NG (6.357)	ND (C.384)	NO 10.364	NO (0.033)	ND (0.3901	NO (0.382)	NO (0.370)	1086.01 099	ND (0.382)	30
pis(2-Ethylhexyl)phthalate	mg/kg	NE 0.382	NO 10.357	MD (0.388)	ND (0.387)	ND (0.365)	NO 10 3711	PD (0.388)	ND (0.357)	ND (0.364)	NO (0.384)	MD (0.383)	NO (0.363)	NO 10.3521	ND (0.373)	MO ID CED	ND (0.382)	130
Butylbenzylphthalate	mg/kg	PED (0.382)	ND (0.357)	ND (0.388)	ND (0.387)	NO 10 3581	NO (0.371)	MD (3.358)	NO (0.367)	ND (0.384)	NO (0.384)	MD (0.363)	NO 0.383	NE 10.382	PE (0.370)	MD (0.350)	ND 12.382	3,000
Chrysene	mg/kg	S60,0-04	NO (0.357)	NO.10.333,	ND 0.387	NO (0.363)	NO (6,371)	535,0 CM	ND 10 3871	NO 10 384	NE (0.384)	MD (0.380)	MD 13 3831	MD (0.380)	MD (0.370)	ND 10.3801	NC 10.352	230
Dibenz(a,h)anthracene	mg/kg	MD (0.382)	ND (0.357)	NO (0.388)	AD (0.387	40 (C 386)	NO (0.371)	ND (0.388)	MD (0.357)	ND 10 3841	10.10.3341	HO (0.983)	ND (0.353)	MD //0 352	NO (0.370)	NO 12,380	MD /C.363	0.57
Dibenzofuran	mg/kg	HU (0.362)	ND (0.367)	ND /0.388	ND (0.387)	NO (0.338)	ID (0.371	MD (0.388)	ND (6.357)	MD /5.3841	NO (0.054)	ND (0.383)	MO 10 383	ND (0.382)	40 (D.375)	MD (0.080)	NO 77 3521	95
Diethylphthalate	mg/kg	ND 13,382	NE 10,357	ND (0.368	NE 10.3871	N-D (0.366)	NO (0.371)	ND (0.353)	NO 10,087	NO 10 3541	ND 70,384	NO (0.083)	NO 10,3831	4D (0.382)	(#D (D.370)	ND 10.380,	AIC (0.382)	2900
Dimethylphthalate	mg/kg	NO (0.382)	NED (0.387)	NO 10.33E.	mD (8.387)	NO (0.368)	ND (0 871)	NO 10.3881	ND-(0.36T)	h(D (0.384)	NO (0.384)	ND (0.353	MD (0.383)	NO (0.382)	ND (0.370)	NO (0.360)	NO (0.382)	NS
Di-n-butylphthalate	mg/kg	NO (0.382)	ND (0.387)	NO (C.388)	MD 0.387	MO (0.388)	NO-10.3751	ND 10.388	ND (0.387)	NC /0 364	NO 10 384	NO.45.389	NC (0.383)	NO 0.382	ND (0.376)	ND (0,380)	MD (0.382)	1500
Di-n-octylphthalate	mg/kg	MD (0.382)	NO (0.957)	NO 42.366	NO 70, 3871	NO (0.388)	NO (0.371)	MD (0.388	NO (0.357)	ME (0.364)	NO (0.564)	NO (0.363)	ND (0.0831	NO 10 3821	NO (0.370)	ND (0.080)	MD 10.3821	10000
Fluoranthene	mg/kg	ND /8 3821	ND (0.357)	(S88.5) CN	ND F1.387	ND (0.385)	NO (C3F)	ND (0.388)	ND (0.357)	AD 10.3341	ND (0.384)	ND (0.383)	NE (0.363)	NO 10,3821	ND (0.370)	NO (0.360)	VC (0.362)	3,200
luorene	mg/kg	NO 10.3821	ND 10,357	AD (0.368)	ME 10 3873	NO 75 3881	45.15.3741	MD (0.366)	NO 40.3573	NO.10,3341	NO 10.3841	NE 10,383	MD (0.383	ND (0.383)	ND 10,3701	NO 15 3851	×10+0-3509	3,000

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Dimock Township Susquehanna County, PA

Sample Location Sample Identification Sample Date		Gesford 2/7 G-7-P9B 5/26/2010	Gesford 2/7 G-7-P10A 5/26/2010	Gesford 2/7 G-7-P10B 5/26/2010	Gesford 2/7 G-7-P11A 5/26/2010	Gesford 2/7 G-7-P11B 5/26/2010	Gesford 2/7 G-7-P11C 5/26/2010	Gesford 2/7 G-7-P12A 5/26/2010	Gesford 2/7 G-7-P12B 5/26/2010	Gesford 2/7 G-7-P13A 5/26/2010	Gesford 2/7 G-7-P13B 5/26/2010	Gesford 2/7 G-7-P14A 5/26/2010	Gesford 2/7 G-7-P14B 5/26/2010	Gesford 2/7 G-7-P15A 5/26/2010	Gesford 2/7 G-7-P15B 5/26/2010	Gesford 2/7 G-7-P16A 5/26/2010	Gesford 2/7 G-7-P16B 5/26/2010	SOIL  Residential Used Aquifer MSCs <sup>1</sup>
Parameter	Units																	Additor in Goo
SVOGs (8270)			SECTION S	150	NAME OF TAXABLE PARTY.	TENESTICS.	Salar and Salar							Contract to the state of	CHEST COLUMN	Washington .	The second	And the state of the
lexachloro-1,3-butadiene	mg/kg	NO (0.382)	ND (0.357)	74D (0.366)	ND (0.387)	MD (0.366)	NO (0.371)	ND (0.388)	AID (0.357)	NO (0:384)	NO (0.384)	ND (0.363)	MD (0.383)	MD /0.3821	NO.(0.370)	NO (0.360)	NO (0.383)	10
Hexachlorobenzene	mg/kg	ND (0.382)	MD (0.35T)	NG (0.388)	ND (0.38T)	ND (0.388)	NO (0.371)	ND (0.388)	MD (0.357)	NO (0.384)	NC-10-3841	ND (0.383)	NE (0.353)	ND (0.382)	NO (0.370)	ND (0.380)	ND (0.382)	0.96
Hexachlorocyclopentadiene	mg/kg	ND (0.382)	NO (0.357)	NO (0.388)	34D (0.357)	ND (0.353)	ND (0.371)	ND (0.388)	NO (0.367)	NO (0.364)	ND (0.384)	MD (0.383)	ND (0.382)	ND (0.362)	ND (0.370)	ND (0.360)	ND (0.382)	91
Hexachloroethane	mg/kg	ND (0,352)	ND (0.357)	MD (0.368)	ND (0.387)	ND (0.386)	NE (0.371)	ND (0.358)	PID (0.357)	ND (G.354)	NO (5.384)	ND (0.383)	(E8E.0) CHr	NO (0.352)	ND (0.370;	ND (0.336)	ND (0.382)	0.56
ndeno(1,2,3-cd)pyrene	mg/kg	ND (0.382)	ND (0.357)	ND (0.388)	ND (0.387)	NE (0.388)	ND (0.371)	HID (0.368)	ND (0.357)	MD (0.384)	AD (0.384)	ND (0:363)	MD (0.383)	NO (0.362)	ND (0.370)	ND (0.360)	ND (0.362)	6
sophorone	mg/kg	ND (0.382)	ND (0.35T)	ND (0.335)	HD (0.367)	(688,0) GH	ND (0.371)	NO (0.388)	ND (0.337)	ND (0.384)	ND (0.384)	ND (0.383)	ND (0.3831	ND (0.382)	ND (0.370)	ND (0.380)	MD (0.382)	10
Naphthalene	mg/kg	MD (0,362)	ND (0.357)	MO (0.358)	MD (0.397)	ME) (0.388)	MD (0.371)	ND (0.388)	ND (0.357)	ND (0.384)	ND (0.364)	ND (0.383)	ND (0.353)	ND (0.382)	ND (0.370)	ND (0.380)	ND (0.352)	25
Vitrobenzene	mg/kg	MD (0.382)	ND (0.357)	ND (0.388)	ND (0.357)	(688.0) CM	ND (0.371)	ND (0.368)	ND (0.357)	ND (0.364)	ND (0.384)	ND (0.383)	ND (0.383)	NO (0.382)	ND (0.370)	ND (0.360)	NO (0.383)	7.3
N-Nitroso-di-n-propylamine	mg/kg	ND (0.382)	MD (0.337)	NO (0.36S)	MD (0.38T)	ND (0.365)	NO (0.371)	NO (0.398)	ND (0.357)	ND (0.384)	NO (0.364)	ND (0.383)	ND (0.363)	NO (0.382)	ND (0.370)	ND (0.360)	ND (0.382)	0.0094
N-Nitrosodiphenylamine	mg/kg	NO (0.082)	MD (0.357)	ND (0.388)	ND (0.38°)	NO (0.388)	ND (0.374)	ND (0.338)	NO (0.357)	ND (0.384)	ND (0.364)	NO (0.363)	MD (0.383)	NO (0.362)	NO (0.370)	NO 19.360	ND (0.352)	20
entachlorophenol	mg/kg	ND (0.905)	ND (0.893)	ND (0.913)	ND (0.978)	MD (0.915)	ND (0.928)	ND (0.921)	ND (0.892)	ND (0.911)	NO (0.010)	ND (0.907)	140 (0.909)	NO (0.905)	MD (0.828)	NO (0.900)	ND (0.907)	5
Phenanthrone	mg/kg	ND (0.382)	ND (0.357)	ND (0.368)	NE (0.387)	ND (0.398)	NE (0.371)	ND (0.368)	MD (0.357)	NO (0.384)	NO (0,384)	(E88.0) GM	ND (0.363)	ND (0.352)	ND (0.370)	ND (0.380)	NO (0.382)	10.000
Phenol	mg/kg	ND (0.362)	ND (0.357)	MD (0.366)	ND (0.367)	ND (0.366)	MD (0.371)	(686.0) GM	NO (0.357)	ND (0.364)	ND (0.364)	ND (0.383)	ND (0.383)	NO (0.362)	MD (0.370)	NO (0.380)	ND (0.382)	200
Pyrene	mg/kg	NO (0:382)	ND (0.357)	MD (0.368)	NE (0.387)	MD (0.388)	ND (0.371)	MD (0.358)	ND (0.357)	MD (0,364)	MG (0.384)	ND (0.363)	ND (0.363)	NO (0.352)	NO (0.370)	ND (0.380)	NO (0.362)	2,200

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## Table 4.12-1 Test Pit Analytical Results for Soil Teel 6 Wellsite

Dimock Township, Susquehanna County, PA

Sample Loation Sample Identification Sample Date		Teel 6 TEEL-6-P1A 5/27/2010	Teel 6 TEEL-6-P1B 5/27/2010	Teel 6 TEEL-6-P1C 5/27/2010	Teel 6 TEEL-6-P1D 5/27/2010	Teel 6 TEEL-6-P2A 5/27/2010	Teel 6 TEEL-6-P2B 5/27/2010	Teel 6 TEEL-6-P2C 5/27/2010	Teel 6 TEEL-6-P3A 5/27/2010	Teel 6 TEEL-6-P3B 5/27/2010	Teel 6 TEEL-6-P3C 5/27/2010	Teel 6 TEEL-6-P4A 5/27/2010	Teel 6 TEEL-6-P4B 5/27/2010	Teel 6 TEEL-6-P4C 5/27/2010	SOIL  Residential Used  Aguifer MSCs <sup>1</sup>
Parameter	Units														Aquilei Moos
General Chemistry Analyses		SERVICE STATE	<b>原用到这么类的</b>	The second second		CHARLEST E.	Water Brown	COLUMN TO THE REAL PROPERTY.			ALLE SALES				
Percent Moisture (ASTM D2974-87)	%	8.0	20.3	11.9	8.6	8.3	7.3	7.6	6.5	6.0	7.4	9.4	9.7	6.2	NS <sup>3</sup>
Ethylene Glycol (8015)	mg/kg	ND (10.0)2	ND (10.0)	NO (10.0)	MD (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	NO (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	ND (10.0)	1,400
Metals Analyses (6010B)	CONTRACTOR OF THE PARTY OF THE	Lead to the last	TA NEW JUST LEA		TO SECURE	N. LUNGSON	COMPANIES.	TE SUST OF		Service Control	ALIKS ALM STAND	STANS DE	SAN COLUMN	And the last of th	LIEU BERNE
Lead	mg/kg	119	98.9	95.6	106	35.9	39.5	99.8	122	127	125	442	190	211	450
VOCs (8260)	STANCE OF	A THE RESERVE	THE RESERVE TO SERVE	SHEET STREET	A STATE OF THE PARTY OF THE PAR	AND DESCRIPTION OF REAL PROPERTY.		The state of the	A STATE OF THE STATE OF	No. of Street	CONTRACTOR OF STREET	ALCOHOLD TO	A STORY OF STREET	A STATE OF THE STA	A TOTAL PROPERTY.
Benzene	mg/kg	ND (0.0063)	ND (0.0080)	ND (0.0080)	NO (0,0059)	ND (0.0088)	ND (0.0024)	ND (0.3063)	ND (0.0050)	MD (0.0073)	ND (0.0089)	ND (0.0074)	NE (0.0078"	ND (0.0069)	0.5
1,2-Dibromoethane (EDB)	mg/kg	ND (0,0063)	ND (0.0080)	NE) (0.0080)	ND (0.0059)	ND (0.0088)	ND (0.0024)	ND (0.0083)	ND (0.0050)	ND (0.0078)	ND (0.0069)	ND (0.0071)	MD (0.0078)	(6500.0) GM	0.005
1,2-Dichloroethane	mg/kg	ND (0.0083)	ND (0.0080)	MD (0.0080)	ND (0.0059)	(5600,0) DM	ND (0.0024)	NO (0.0068)	ND (0.0050)	ND (0.0076)	ND (0.0089)	ND (0.0074)	MD (0.0078)	ND (0.0069)	0.5
Ethylbenzene	mg/kg	MD (0.0063)	ND (0.0080)	(0.0020) OM	ND (0.0059)	ND (0.0088)	ND (0.0024)	NO (0.0063)	ND (0.0050)	ND (0.0078)	MD (0.0089)	ND (0.0074)	ND (0,0078)	ND (0.0089)	70
Isopropylbenzene (Cumene)	mg/kg	(6500.0) DM	(0800.0) OM	MO (0.0080)	ND (0,0059)	MD (0.0086)	NO (0.0024)	NO (0.0068)	(0500.01 CM	(8700.0) OM	ND (0.0039)	ND (0.0071)	ND (0.0078)	MD (0.0089)	600
Methyl-tert-butyl ether	mg/kg	ND (0.0063)	ND (0.0030)	(0.800.0) CIM	ND (0.0059)	ND (0.0088)	ND (0,0024)	ND (0.0083)	MO (0.0050)	MO (0,0073)	(6600°0 DN	ND (0.0071)	NO (0.0076)	ND (0.0069)	2
Naphthalene	mg/kg	NO (0.0063)	ND (0.0080)	ND (0.0080)	NO (0.0059)	ND (0.0093)	(#S00.0) DM	ND (0.0083)	(0500.0) CM	ND (0.0076)	NO (0.0069)	NO (0.9071)	NO (0.0078)	ND (0.0059)	25
Toluene	mg/kg	(£600,00 DM	(0800.0) QM	(0.0080) CIA	ND (0.0059)	(8806.0) GM	(#S00,010M	48800.01 GM	ND (0.0050)	ND (0.0076)	MD (0.0089)	MD (0.0071)	NE (0.0076)	ND (0.0069)	100
1,2,4-Trimethylbenzene	mg/kg	MD (0.0083)	ND (0.0080)	ND (0.0080)	ND (0.0059)	(8800.0) GM	NO (0.0024)	No (0,0088)	ND (9,0050)	ND (0.0076)	(6606,6) CM	ND (0.0071)	NO (0.0076)	ND (0.0089)	8.4
1,3,5-Trimethylbenzene	mg/kg	MD (0.0063)	ND (0.0080)	(0.0080) CM	ND (0.0058)	(8600.D) QM	ND (0.0024)	MD (0.0083)	ND (0.0050)	NO (0.0078)	(9300.0) GM	NO (0.0071)	MD (0.0076)	ND (0.0059)	2.3
Xylene (Total)	mg/kg	(8810.0) CM	ND (0.0241)	MD (0.0239)	ND (0,0178)	ND (0.0257)	ND (0.0073)	NO (0.0189)	MD (0.0151)	MD (0.0228)	ND (0.0206)	ND (0.0212)	NO (8,0227)	ND (0.0207)	1,000
SVOCs (8270-SIM)	Section 1	PARTIE HATE		HE WAS A STREET		ASSESSMENT OF STREET	E ME STORE	NAME OF THE PARTY	THE REAL PROPERTY.		THE PARTY NAMED IN		DOTO STATE OF THE PARTY OF THE	and the second	ALL PROPERTY OF THE PARTY OF TH
Anthracene	mg/kg	MD (0.0074)	(\$800,0) GM	ND (0.0075)	NC (0.0073)	ND (0.0071)	ND (0.0071)	ND (0.0071)	(0'(0'0) DM	ND (0.0071)	ND (0.0072)	ND (0.0072)	ND (0.0072)	ND (0.0089)	350
Benzo(a)anthracene	mg/kg	ND (0.0071)	ND (0.0083)	ND (0.0075)	ND (0.0073)	ND (0.0071)	NO (0.0071)	ND (0:0071)	NO (0.0070)	ND (0.0071)	ND (0.0072)	ND (0.0072)	ND (0.0072)	ND (0.0069)	6
Benzo(a)pyrene	mg/kg	ND (0.0071)	MD (0.0083)	ND (0,0075)	ND (0.0073)	ND (0,0071)	NG (0.0071)	(PT 00.0) CIA	NO (0.0070)	AID (0.0071)	MD (0,0072)	ND (0.0072)	ND (0.0072)	ND (0.0069)	0.6
Benzo(b)fluoranthene	mg/kg	NO (0.0071)	MD (0.0083)	MD (0.0075)	MD (0.0073)	NO (0.00711	ND (0.3071)	ND (0.0071)	ND (3.0070)	NO (0,0071)	ND (0.0072)	NO (0.0072)	NO (0.0072)	MD (0.0089)	6
Benzo(g,h,i)perylene	mg/kg	ND (0.0071)	VE800,0) GW	ND (0.0075)	ND (0.0070)	ND (0,0071)	ND (0.0071)	ND (0.0071)	ND (0.00754	ND (0.0071)	NO (0.0072)	NO (0.0072)	MD (0.0072)	MO (0.0068).	180
Chrysene	mg/kg	ND (0.0071)	ND (0.0083)	MD (0.0075)	MD (0.0073)	NO (0,0071)	ND (0.0071)	MD (0.0071)	NO (0.0070)	NET (0.0071)	NO (0.0072)	MD (0.0072)	MD (0.0072)	ND (0.0059)	230
luorene	mg/kg	ND (0.0071)	ND (0.0083)	ND (0,0075)	ND (0.0073)	ND (0.90T1)	ND (0.0071)	NO (0.0071)	ND (0.00.70)	NO (0.0071)	MD (0.0072)	ND (0.0072)	(E100.0) CM	(6800.0) CM	3,000
ndeno(1,2,3-cd)pyrene	mg/kg	ND (0,0071)	NO (0.0083)	ND (0.0075)	ND (0.0073)	NIO (0.0071)	ND 10.00711	ND (0.0071)	ND (0.0070)	ND (0.0071)	ND (0.0072)	NO (0.0072)	NO (0.0072)	ND (0.0089)	6
Phenanthrene	mg/kg	ND (0.0071)	ND (0.0083)	NO (0.0076)	ND (0.0073)	ND (0.0071)	ND (0.0071)	MG (0.0071)	NO (0.0070)	ND (0.00*1)	ND (0.0072)	NO (0.0072)	ND (0.0072)	NO (0.0068)	10,000
Pyrene	ma/ka	ND (0.0075)	ND (9.0083)	ND (0.0075)	NO (0.0073)	NO (0.3071)	ND (0.0071)	NO (0.0071)	NO (0.0070)	NO 70,00711	ND (0.0072)	NO (0.0072)	NO (0.0072)	ND (0.0089)	2200

Notes:
All results in milligram per kilogram (mg/kg) unless otherwise stated.

1 = Medium-Specific Concentrations (MSCs) were established from the Residential, Used Aquifer with TDS < 2500 MSCs Soil to Groundwater Numeric Values listed in Appendix A, Table 3 and Table 4 of 25 PA Code Section 250, Administration of the Land Recycling Act (Act 2) regulations.

2 = xt; (0.005°) = Parameter not detected at the detection limit specified in parentheses.

3=No Standard

15.9 = Result exceeds SHS Residential, Used Aquifer MSC

### Table 4.12-2 **Analytical Results for Water** Teel 6 Wellsite

		2		Surfac	Surface Water Quality Criteria					
Sample Location Sample Identification Sample Date	TI W.	Teel 6 Teel-6-UP 5/26/2010	Teel 6 Teel-6-DN 5/26/2010	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria				
Parameter	Units									
General Chemistry (8015)				The state of the state of the state of						
Ethylene Glycol	mg/L	ND (19.0)	MD (10.0)	NS	NS	NS				
VOCs (8260)			到 4 人 1 人 1 年 1 月 1		Breith Williams					
Benzene	ug/L	ND (1.0)2	ND (1.0)	130	640	1.2				
Ethylbenzene	ug/L	ND (1.0)	(0,1) DK	580	2,900	530				
Isopropylbenzene (Cumene)	ug/L	MD (1.0)	ND (1.0)	NS <sup>3</sup>	NS	NS				
Methyl-tert-butyl ether	ug/L	MD (1.6)	ND (1.0)	NS	NS	NS				
Naphthalene	ug/L	MD (2.0)	ND (2.0)	43	140	NS				
Toluene	ug/L	(1.0) (ND (1.0)	ND (1.0)	330	1,700	1,300				
1,2,4-Trimethylbenzene	ug/L	ND (1.0)	ND (5.0)	NS	NS	NS				
1,3,5-Trimethylbenzene	ug/L	ND (1.0)	ND (1.0)	NS	NS	NS				

Notes:

1= Values from 25 Pa Code Chapter 93.8, Table 5; values assume a pH of 6.5 SU and hardness of 100 mg/L, where applicable.

 $<sup>^{2}</sup>$ = ND (1.0) = Parameter not detected at the detection limit specified in parentheses.

### Table 4.13-1 Borehole Analytical Results for Soil Teel 7 Wellsite

% mg/kg mg/L	7.4	Salar Control Salar	
mg/kg	7.4		
mg/kg	7.4		A CONTRACTOR OF THE PARTY OF TH
		10.5	NS <sup>3</sup>
mall	12.1	ND (5.4)	1,900
HIG/L	ND (3.0)2	ND (3.0)	NS
mg/L	MD (0.10)	ND (0.10)	NS
mg/kg	ND (10.01	MD (10:01	1,400
			District Control
mg/kg	11,500	8,990	190,000
mg/kg	ND (0.38)	MD (0.32)	27
mg/kg	7.8	11.8	12
mg/kg	85.9	79.2	8,200
mg/kg	0.58	0.4	320
mg/kg	6.7	5.4	1,900
mg/kg	0.37	0.25	38
mg/kg	1,400	1,520	NS
ma/kg	13.1	10,5	190,0004
	10.8	9	50
	11.9	17.2	8.100
			150,000
			450
			NS
			2,000
			650
			650
		19.7333	NS
			26
			84
			NS
			14
			1,500
	(3) (13) (3) (3)	26 2/2/80 87	12,000
			10
mgreg	A CHARLES THE REAL PROPERTY.		ALTERNATION OF THE RESIDENCE
mo/ko	140 (0.0088)	NO 70 00471	20
			0.08
			0.5
			3.1
			0.7
			8.4
			60
			0.5
			75
			0.5
			2.3
			61
			10
			400
			290
	mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg	mg/kg         ND (10.0)           mg/kg         ND (0.38)           mg/kg         ND (0.38)           mg/kg         7.8           mg/kg         85.9           mg/kg         0.58           mg/kg         0.37           mg/kg         1,400           mg/kg         13.1           mg/kg         10.8           mg/kg         11.9           mg/kg         23,600           mg/kg         4,260           mg/kg         4,260           mg/kg         4,260           mg/kg         4,260           mg/kg         1,460           mg/kg         1,460           mg/kg         1,460           mg/kg         1,231           mg/kg         1,231           mg/kg         1,231           mg/kg         1,232           mg/kg         1,232           mg/kg         1,232           mg/kg         1,232           mg/kg         1,232           mg/kg         1,233           mg/kg         1,233           mg/kg         1,233           mg/kg         1,233           mg/	mg/kg         ND (10.0)         ND (0.30)           mg/kg         ND (0.30)         ND (0.32)           mg/kg         ND (0.30)         ND (0.32)           mg/kg         7.8         11.8           mg/kg         85.9         79.2           mg/kg         0.58         0.4           mg/kg         6.7         5.4           mg/kg         0.37         0.25           mg/kg         1,400         1,520           mg/kg         13.1         10.5           mg/kg         10.8         9           mg/kg         10.8         9           mg/kg         11.9         17.2           mg/kg         23,600         19,200           mg/kg         23,600         19,200           mg/kg         4,260         3,450           mg/kg         4,260         3,450           mg/kg         995         919           mg/kg         1,30         15.7           mg/kg         1,460         1,120           mg/kg         1,460         1,120           mg/kg         0.79         0.72           mg/kg         10.13)         10.13           mg/kg<

### Table 4.13-1 Borehole Analytical Results for Soil Teel 7 Wellsite

Sample Locatio Sample Identificatio Sample Da	n te	TEEL 7 TEEL-7-B1 5/25/2010	TEEL 7 TEEL-7-B2 5/25/2010	SOIL Residential Used Aquifer MSCs <sup>2</sup>
Parameter	Units			
VOC Analyses (8260)		0.0050	0.0447	NA INC. AND
Acetone	mg/kg	0.0356	0.0417	3,300
Benzene	mg/kg	ND (9:5088)	ND (0.0647)	0.5
Bromodichloromethane	mg/kg	ND (0,0068)	ND (0.0G47)	8
Bromoform	mg/kg	ND (0.0388)	MO (0.0047)	8
Bromomethane	mg/kg	(8800.01 GM	ND (0.0047)	1
Carbon disulfide	mg/kg	ND (0.0088)	ND (0,0047) ND (0,0047)	150 0.5
Carbon tetrachloride Chlorobenzene	mg/kg	ND (0.0085)	NC (0.0047)	10
Chloroethane	mg/kg	MD (0.0068) MD (0.0088)	ND (0.0047)	23
Chloroform	mg/kg mg/kg	ND (0.0068)	ND (0.0047)	8
Chloromethane	mg/kg	ND (0.0088)	r D (0.0047)	3
cis-1,2-Dichloroethene	mg/kg	88CC 0' CN	ND (0.00471	7 -
cis-1,3-Dichloropropene	mg/kg	MD (8,0088)	ND (0.0047)	0.66
Dibromochloromethane	mg/kg	(300C0)	ID (0.0047)	8
Ethylbenzene	mg/kg	MD (0.0038)	ND (0.0047)	70
Isopropylbenzene (Cumene)	mg/kg	ND (0.0068)	NO 10,00471	600
m&p-Xylene	mg/kg	ND (0.0138)	ND (0.00s3)	1,000
Methylene Chloride	mg/kg	NE 10 0068	ND (0.004T)	0.5
Methyl-tert-butyl ether	mg/kg	(3800.0) CM	ID (0.004T)	2
Naphthalene	mg/kg	MD (0.5058)	ND (0.0047)	25
n-Butylbenzene	mg/kg	ND (0.0088)	ND (0,0047)	950
n-Propylbenzene	mg/kg	ND (0.0088)	MD (0.0347)	290
o-Xylene	mg/kg	MD (0.00681 -	ME) (0,0047)	1,000 <sup>6</sup>
p-Isopropyltoluene	mg/kg	MD/0.00881	NC /0.30471	NS
sec-Butylbenzene	mg/kg	MD (0.0088)	ND (0.00471	350
Styrene	mg/kg	ND (0.0088)	ND (0.0047)	24
Tetrachloroethene	mg/kg	ND (0.0088)	ND (0.0047)	0.5
Toluene	mg/kg	ND (0.0058)	NID (0.0047)	100
TOTAL BTEX	mg/kg	MD (0.0409)	NO (0.0280)	NS
trans-1,2-Dichloroethene	mg/kg	ND (0.0068)	ND (0.0047)	10
trans-1,3-Dichloropropene	mg/kg	ND (0.0068)	ND (0.0047)	0.66
Trichloroethene	mg/kg	NED (0.0058)	(0.0047)	0.5
Vinyl chloride	mg/kg	MD (0.0088)	HD (0,0047)	0.2
Xylene (Total)	mg/kg	(0.0208) (III)	NO-10.0140)	1,000
SVOC Analyses (8270)			DATE OF THE PARTY	The state of the later of the l
1,2,4-Trichlorobenzene	mg/kg	ND (0.359)	ND (0.388)	27
1,2-Dichlorobenzene	mg/kg	ND (0.358)	(896.0) CI	60
1,3-Dichlorobenzene	mg/kg	MD (0.369)	ME: (0.368)	61
1,4-Dichlorobenzene	mg/kg	ND (0.359)	ND (0.368)	10
2,4,5-Trichlorophenol	mg/kg	VD (0.887)	0 (0 850)	2,300
2,4,6-Trichlorophenol	mg/kg	ND (0.358)	MD (0,388)	11
2,4-Dichlorophenol	mg/kg	ND (0,359)	NE (0.388)	2
2,4-Dimethylphenol	mg/kg	ND (0.989)	ND (0.388)	73
2,4-Dinitrophenol	mg/kg	ND (0.897)	NE (0.920)	7.3
2,4-Dinitrotoluene	mg/kg	'(D (0.359)	ND (C 368)	0.21
2,6-Dinitrotoluene	mg/kg	ND (0.369)		3.7 6.200
2-Chloropathenol	mg/kg	MD (0.359)	ND (0.388)	6,200
2-Methylnaphthalene	mg/kg	ND (0,359) ND (0,359)	ND (0.368)	4.4 600
2-Methylphenol(o-Cresol)	mg/kg	MD (0.355)	MD (0.368)	180
2-Nitroaniline	mg/kg mg/kg	MD (0.887)	+D (0.920)	11
2-Nitrophenal	mg/kg mg/kg	ND (0.358)	AD (0.388)	29
3&4-Methylphenol(m&p Cresol)		MD (0.717)	ID (0.735)	187
304-Methylphenol(map Cresor)	mg/kg mg/kg	ND (0.358)	NO (0.735)	8.3

#### Table 4.13-1 Borehole Analytical Results for Soil Teel 7 Wellsite

Sample Location Sample Identification Sample Date		TEEL 7 TEEL-7-B1 5/25/2010	TEEL 7 TEEL-7-B2 5/25/2010	SOIL Residential Used Aquifer MSCs <sup>2</sup>
Parameter	Units			
SVOC Analyses (8270)	Selfore Maria	LE L'ESTANTA DE LES	THE RESIDENCE OF THE PARTY OF T	Mark Warrant Barry And
3-Nitroaniline	mg/kg	ND (0.887)	MC 70,9201	1.1
4.6-Dinitro-2-methylphenol	mg/kg	ND (0.897)	(CSG-0) CIV	0.37
4-Bromophenylphenyl ether	mg/kg	AID (0.359)	MD (0.368)	NS
4-Chloro-3-methylphenol	mg/kg	ND (9.359)	ND (0.358)	37
4-Chloroaniline	mg/kg	ND (0.359)	HET (0.368)	0.42
4-Chlorophenylphenyl ether	mg/kg	ND (0.359)	ND 10 365	NS
4-Nitroaniline	mg/kg	MD (0.897)	MD (0.820)	3.3
4-Nitrophenol	mg/kg	ND (0.359)	1886.01 QM	6
Acenaphthene	mg/kg	ND 10 3591	HO 70,3881	2,700
Acenaphthylene	mg/kg	MD (0.559)	MD (0.388)	2,500
Anthracene	mg/kg	ND (0.369)	ND (0.368)	350
Benzo(a)anthracene	mg/kg	- ND (0.359)	NC (0.388)	5.7
Benzo(a)pyrene	mg/kg	ND (0.359)	MD (0.368)	0.57
Benzo(b)fluoranthene	mg/kg	ND (0.359)	(4D (0.368)	5.7
Benzo(g,h,i)perylene	mg/kg	ND (0,359)	ND (0.888)	180
Benzo(k)fluoranthene	mg/kg	MD (0.359)	MD (0.360)	57
Benzyl alcohol	mg/kg	ND (0.359)	MD (0.388)	1.800
bis(2-Chloroethoxy)methane	mg/kg	ND (0.359)	ND (0.368)	11
bis(2-Chloroethyl) ether	mg/kg	ND (0.359)	10.3381	0.015
bis(2-Chloroisopropyl) ether	mg/kg	ND (0.359)	(880.01 CM	30
bis(2-Ethylhexyl)phthalate	mg/kg	ND (0.359)	MD (C.358)	130
Butylbenzylphthalate	mg/kg	ND (0.359)	ND (0.388)	3.000
Chrysene	mg/kg	ND (0.359)	ND (0.968)	230
Dibenz(a,h)anthracene	mg/kg	ND (0.359)	MD-(0.088)	0.57
Dibenzofuran	mg/kg	ND (0.359)	MD (0.368)	95
Diethylphthalate	mg/kg	ND (0.359)	MD (0.358)	2900
Dimethylphthalate	mg/kg	ND (0.359)	ND (0,368)	NS
Di-n-butylphthalate	mg/kg	ND (0.359)	HD (0.368)	1,500
Di-n-octylphthalate	mg/kg	ND (0.359)	NC (0.358)	8,800
Fluoranthene	mg/kg	ntD (0.359)	4D (0.388)	3,200
Fluorene	mg/kg	* ND (0.359)	ND (0 368)	3,000
Hexachloro-1,3-butadiene	mg/kg	ND (0.359)	ND (0.368)	10
Hexachlorobenzene	mg/kg	MD (0.359)	ND (0.368)	0.96
Hexachlorocyclopentadiene	mg/kg	ND (0,358)	ND (0,368)	91
Hexachloroethane	mg/kg	ND (0.359)	MD (0.386)	0.56
Indeno(1,2,3-cd)pyrene	mg/kg	ND (0,359)	ND /0.3881	5.7
Isophorone	mg/kg	ND (0.359)	NET (0.338)	10
Naphthalene	mg/kg	NG (0.369)	NE (0.358)	25
Nitrobenzene	mg/kg	ND (0.359)	NO (0.358)	7.3
N-Nitroso-di-n-propylamine	mg/kg	VD (0.359)	ND (0.368)	0.0094
N-Nitrosodiphenylamine	mg/kg	ND (0,359)	VD (0.388)	20
Pentachlorophenol	mg/kg	ND (0.897)	HD (0.920)	5
Phenanthrene	mg/kg	ND (0.359)	ND (0.368)	10,000
Phenol	mg/kg	ND (0.359)	ND (0.368)	200
Pyrene	mg/kg	MD (0.356	ND (0.388)	2.200

Notes:  $^2$ = MD (3.0) = Parameter not detected at the detection limit specified in parentheses.

<sup>&</sup>lt;sup>1</sup> = Medium-Specific Concentrations (MSCs) were established from the Residential, Used Aquifer with TDS < 2500 MSCs Soil to Groundwater Numeric Values listed in Appendix A, Table 3 and Table 4 of 25 PA Code Section 250 , Administration of the Land Recycling Act (Act 2) regulations. <sup>3</sup>=No Standard

<sup>4=</sup>as Chromium III.

<sup>&</sup>lt;sup>5</sup>=as cis-1, 2 - Dichloroethlene

#### Table 4.13-2 Analytical Results for Surface Water Samples Teel 7 Wellsite

						Surfac	ce Water Quality Cr	iteria³
Sample Identification Sample Location Sample Date Parameter	Units	TEEL #5 C  Upgradient  12/9/2009	TEEL #7 A  Wetland 12/9/2009	TEEL #7 B  Wetland  12/9/2009	TEEL #7 C  Downgradient  12/9/2009	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria
General Charmstry	THE PARTY COLUMN	STALLS HERE	P PROPERTY.	ALCO PARTIES		TANKS OF	Witness States	BUSINESS N
pH (SM 4500-H+B)	pH units	7.2	5.6	4.9	7.2	6.0	-9.0	NS
TPH (C06-C10) (GRO, EPA 8015B Mod)	ug/L	ND (203)	ND (200)	ND (200)	MD (200)	NS'	NS	NS
Diesel Components (DRO, EPA 8015B Mod)	mg/L	MD45,321	NO (0.12)	NO (0 (5)	46-911	NS	NS	NS
Total Petroleum Hydrocarbons (EPA 1664A)	mg/L	ND 48;	ME (4.5)	MQ (5.1)	AS MAD	NS	NS	NS
Acidity (SM 2310B)	mg/L	ND (10.0)	10 HEA!	ME (10.0)	40 (10.0)	NS	NS NS	NS
Alkalinity (SM 2320B)	mg/L	24.0	30.0	(0,0*) CIP	26.0	NS	NS	NS
Ammonia (EPA 350.1)	mg/L	ND (0.30)	0.19	ND (0.10)	NO (0:10)	NS	NS	NS
Total Dissolved Solids (SM 2540C)	mg/L	56.0	82.0	32.0	66.0	NS	NS	750
Chloride (SM 4500-CI-E)	mg/L	12.7	12.7	14.7	13.5	NS	NS	250
Metals (6010/7470)				SCANE LINE	DATE OF LES	Charles Sale of Boar	PERSONAL PROPERTY.	WEIGHT SE
Aluminum, Total	ug <b>/L</b>	357	40,400	5,180	185	NS	750	NS
Antimony, Total	ug/L	4D (5.0) <sup>2</sup>	ND (5.0)	ND (5,0)	MD (8.9)	220	1,100	5.6
Arsenic, Total	ug/L	MD :5.01	34.4	10.7	NO SECON	150	340	10
Barium, Total	ug/L	35.6	792 2,0	241	33.1	4,100	21,000	2,400
Beryllium, Total Boron, Total	ug/L ug/L	MD (50 0)	2.0	ND (50.0)	NO (1.9)	NS 1,600	NS 8,100	NS 3,100
Cadmium, Total	ug/L ug/L	-10 (5 (t)	MD (5.0)	10.00 CM	NO (10) (1)	NS	NS	NS
Calcium, Total	ua/L	10,600	20,400	14,600	10,600	NS	NS	NS
Chromium, Total	ug/L	ND (6.0)	38.4	5.5	ND (5.0)	NS	NS	NS
Cobalt, Total	ug/L	P(D (8.0)	29.2	6.2	ND (5.0)	19	95	NS
Copper, Total	ug/L	NO (5 0)	37.3	5.2	ND 5.0	NS	NS	NS
Iron, Total	ua/L	633	89,600	47,700	370	1,500	1,500⁴	NS <sup>4</sup>
Lead, Total	ug/L	NO 12.5)	62.5	13.5	MD (2.0)	NS	NS	NS
Magnesium, Total	ug/L	2,290	11,400	3,230	2,230	NS -	NS	NS
Manganese, Total	ug/L	92.9	2,160	990	70.2	NS	NS	1,000
Molybdenum, Total	ug/L	MO MOON	MD (50 C)	10.611.04	ND (10-0)	NS	NS	NS
Nickel, Total	ug/L.	M5 (10.01	53.8	10.3	MOTIC OF	NS	NS	NS
Potassium, Total	ug/L	1,330	7,350	1,740	1,340	NS	NS	NS
Selenium, Total	ug/L	ND (5.01	ND (5.0)	MD (6.0)	N/D (5.0)	NS	NS	NS
Silver, Total	ug/L	6.440	5,680	8,080	6,700	NS NS	NS NS	NS
Sodium, Total Thalfium, Total	ug/L ug/L	80 000	H2 (10 0)	MO 100	ND (10,0)	13	65	NS 0.24
Vanadium, Total	ug/L	ND (50)	48.3	7.2	ND (5.0)	100	510	NS
Zinc, Total	ug/L	10 010 01	243	26.6	4D-110.01	NS	NS	NS
Mercury, Total	ug/L	ND (0.20)	NO (0.20)	ND (0.20)	ND (0.20)	NS	NS	NS
Metals (6010/7470)		VARIABLE OF THE PARTY OF THE PA	WEST SHIPE	THE RESERVE	THE PERSON NAMED IN	A THE PARTY OF		SULP CONTRACTOR
Aluminum, Dissolved	ug/L	MD (80 B)	MD (50.6)	243	NO (80-0)	NS	NS	NS
Antimony, Dissolved	ug/L	MD (6.0	NO 15 D)	(2055)	NO to Di	NS	NS	NS
Arsenic, Dissolved	ug/L	140 (50)	NO (5.0)	시한 (5.0)	MD (5.0)	NS	NS	NS
Barium, Dissolved	ug/L	33.0	70.5	120	31_6	NS	NS	NS
Beryllium, Dissolved	ug/L	ND (10)	MD II DI	NO NO	MEMON	NS	NS	NS
Boron, Dissolved	ug/L	C 051 CM	ND 50 CL	ND (50.8)	MC 90'0,	NS	NS	NS
Cadmlum, Dissolved	ug/L	MD (5.01	HD (1 0)	ND (1.01	NO (1.0)	0.25	2.01	NS
Calcium, Dissolved	ug/L	10,300	12,200	3,880 ND (5.0)	10,500	NS 74.1	NS 5000	NS NS
Chromium, Dissolved Cobalt, Dissolved	ug/L	MD (5.0)	HD (5.0)	NO (5.0)	ND (5.0)	74.1 NS	569.8 NS	NS NS
Copper, Dissolved	ug/L ug/L	(D (5 0)	PID (5.01	ND (5.0)	WD 15.01	9.0	13	NS
Iron, Dissolved	ug/L	122	145	5,590	137	NS NS	NS	300
Lead, Dissolved	ua/L	ND (2.5)	PUD (2.0)	NO 12-01	F(3 (2 0)	2.5	64.6	NS
Magnesium, Dissolved	ug/L	2,170	2,180	982	2,190	NS	NS	NS
Manganese, Dissolved	ug/L	41.7	721	483	50.1	NS	NS	NS
Molybdenum, Dissolved	ug/L	MD #10.01	15 (10.0)	16.6	1001 CH	NS	NS	NS
Nickel, Dissolved	ua/L	ND (100)	6 0th CM	ND (10.0)	MD MOO	52	470	610
Potassium, Dissolved	ug/L	1,230	2,990	858	1,310	NS	NS	NS
Selenium, Dissolved	ug/L	ND (5.0)	ND (5.0)	160 (5.0)	MD (5.0)	4.6	NS	NS
Silver, Dissolved	ug/L	MD (1.0)	ND (5 0)	10,F1 CM	ND (1.0)	NS	3.2	NS
Sodium, Dissolved	ug/L	6,510	4,870	3,220	6,660	NS	NS	NS
Thallium, Dissolved	ug/L	MD (10 0)	ND +10.01 ND +15.04	ND (*9.0)	MD 15.01	NS NS	NS NS	NS NS
Variation Dissalund								
Vanadium, Dissolved Zinc, Dissolved	ug/L ug/L	NE (100)	MD (16.0)	ND (10 D)	AID (10.0)	120	120	NS

#### Table 4.13-2 Analytical Results for Surface Water Samples Teel 7 Wellsite

		-				Surface Water Quality Criteria <sup>1</sup>			
Sample Identification  Sample Location  Sample Date	Units	TEEL #5 C Upgradient 12/9/2009	TEEL #7 A  Wetland 12/9/2009	TEEL #7 B  Wetland  12/9/2009	TEEL #7 C  Downgradient  12/9/2009	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria	
	Units	Name and Address of the Owner, where the Owner, which is the Ow		AND DESCRIPTION					
VOCs (8260)		E PERSONAL PROPERTY.	AT THE RESERVE		and the second	ALC: NO.			
1,1,1-Trichloroethane	Ug/L	AE (5.5)	NO ME	40 (1.5) 40 (1.5)	80 H.St.	610	3,000	NS	
1.1.2.2-Tetrachloroethane	ug/L			Comment of the Control of the Contro	4011(0)	210	1,000	0.17	
1,1,2-Trichloroethane	ug/L	ND (5.0)	(6D M.0)	ND 15.00	NO (1.0)	680	3,400	0.59	
1,1-Dichloroethane	ug/L	AID (5.0)	ND (1,0)	ND:01,01	MO / 1.01	NS	NS	NS	
1,1-Dichloroethene 1,2,4-Trichlorobenzene	ug/L	ND 31,01	ND (5.9)		ND (4.0)	1,500 26	7,500	33	
1,2,4-Trimethylbenzene	ug/L	HE M.CI	MD (5.5)	ND IN ST	MD (5.0) ND IS 01	NS	130 NS	35 NS	
1,2-Dichlorobenzene	ug/L ug/L	ND 11 CI	20/10	1 5 11 61	North	160	820	420	
1,2-Dichloroethane	ug/L	40 M.A.	NO 11.01	NO 10	NO /5 01	31,00	15.000	0.38	
1,2-Dichloroethene (Total)	ug/L	MD (3.5)	(19 (2.0)	ND 12 0	NG (20)	NS NS	NS NS	NS NS	
1,2-Dichloropropane	ug/L	NO (1 0)	MD45.01	MD (1.0)	ND (1.0)	2,200	11,000	NS NS	
1,3,5-Trimethylbenzene	ug/L ug/L	MD (1.0)	ND (1.0)	+10 (1.0)	ND (* 0)	NS NS	NS	NS NS	
1.3-Dichlorobenzene	ug/L	NO (1.0)	ND 101	MD M DI	ND 15.0	69	350	420	
1,4-Dichlorobenzene	ug/L	#D11 01	MENTE	NO TO E	ND (1.5)	150	730	420	
2-Butanone (MEK)	ug/L	HE DOO	SOME	85 m0 St	V3 (10 C)	32,000	230,000	21,000	
2-Hexanone	ug/L	Ha heat	MD/100	NO (10 0)	MD (10.5)	4,300	21,000	NS	
4-Methyl-2-pentanone (MIBK)	ug/L	WD 1100	ND 110.61	ND MGG	NS (15 C)	5,000	26,000	NS	
Acetone (MIBK)	ug/L	MD HOO!	MD (10.0)		40/100	86,000	450,000	3,500	
Benzene	ug/L ug/L	NE CLO	ND M.DI	NO MO S1	NO PLO	130	640	1.2	
Bromochloromethane	ug/L	NO mai	ND (10)	Lift is or	NE 15.0	NS NS	NS NS	NS NS	
Bromodichloromethane	ug/L ug/L	NO 11 DI	160-(1-0)	(ED.17.0)	NO IT OIL	NS	NS	0.55	
Bromoform	ug/L	ND (1.0)	NO PLO	10 4.61	82 (1.2)	370	1800	4.3	
Bromomethane	ug/L	NO (5 C)	ND 134	MO (5.0)	MDIKSI	110	550	47	
Carbon disulfide	ug/L	HE 11 61	ND M.OI	MERSON	NO /1 8+	NS	NS NS	NS NS	
Carbon tetrachloride	ug/L	HE 11 01	ND (10)	ND 11.01	ND IS CI	560	2800	0.23	
Chlorobenzene	ua/L	ND 11 Ci	NO 11 01	MD 11 D	ND (ND)	240	1200	130	
Chloroethane	ug/L	NO CLOS	ND N St	ND(1.0)	MD (5.8)	NS NS	NS NS	NS NS	
Chloroform	ug/L	AD /1 51	ND (1.0)	4D (1,0)	NO 15 51	390	1,900	5.7	
Chloromethane	ug/L	MD TVD	ND FI C	ND (1.01	RD IS OF	5,500	28,000	NS NS	
cis-1,2-Dîchloroethene	ug/L	NO (1.0)	ND (19.0)	NOTE	20/10/	NS	NS NS	NS	
cis-1,3-Dichloropropene	ug/L	NO (1.0)	ARD (* 0)	ND (1 0)	(6.71.01	61	310	0.34	
Dibromochloromethane	ug/L	NE IS OF	MD = 01	NO NO	ND (10.0)	NS	NS	0.4	
Ethylbenzene	ug/L	NO 11.01	NO (5.0)	ND 25 01	ND (5.0)	580	2,900	530	
Isopropylbenzene (Cumene)	uα/L	01D (5.0)	MD (19.0)	ND /1 01	UD 17 01	NS	NS	NS	
	- Charles	14D (2.0	NP (2.0)	ND (2.0)	ND (20)	210	1,100 <sup>5</sup>	-	
m&p-Xylene Methylene Chloride	ug/L	NE (10)	NO (1.0)	HE (*:0)				70,000	
Methyl-tert-butyl ether	ug/L		ND (5-0)	ND (5.01	ND (1.01	2,400 NS	12,000	4.6	
	ug/L ug/L	ND (2.01	NO (2.0)	ND (2.01	710 (2.0)		NS	NS	
Naphthalene		NOTE		NO (-21		43 NS	140	NS	
n-Butylbenzene	uq/L	ND (1 0)	ND (1.0)	MD (5.0)	NO FEE		NS	NS	
n-Propylbenzene	ug/L	-	MD (1.0)		10 (10)	NS	NS	NS	
a-Xylene	ug/L	ND (Y 0)	MD (1.0)	MD (1,0)	ND (1.0)	2105	1,100	70,0005	
p-Isopropyltoluene	UQ/L	ID (12)	HD (1.0)	NOAM	MO (1 S)	NS	NS	NS	
sec-Butylbenzene	ug/L	ND (1.0)	195 14 01	<b>一种介绍</b>	ND 11 ON	NS	NS	NS	
Styrene	ug/L	(ID (1 G)	NO HIGH	45 (1.0)	NO IS OI	NS	NS	NS	
Tetrachloroethene	ug/L	MD (1.0)	ND (*C)	N217,01	ND (1.0)	140	700	0.69	
Toluene	ug/L	10 m CM	ND (1.0)	MD(1.0)	ND (4 0)	330	1,700	1,300	
trans-1,2-Dichloroethene	ug/L	M5 (1.0)	NO (1.0)	MO (1,0)	40 (1 0)	1,400	6,800	140	
trans-1,3-Dichloropropene	ug/L	MD (- 0)	140 (1.0)	MD11.01	ND (* 0)	61	310	0.34	
Trichloroethene	ug/L	ND (* 0)	NE (1.0)	(U) (1,0)	ND (1.01	450	2,300	2.5	
Vinyl Chloride	ug/L	NO 15 (0)	ND (5.0)	ND(1.0)	ND PLOI	NS	NS	0.025	
Xylene (Total)	ug/L	ND (3.0)	ND (3.0)	PD (3.0)	ND (3.5)	210	1,100	70,000	

#### Table 4.13-2 Analytical Results for Surface Water Samples Teel 7 Wellsite

						Surface Water Quality Criteria				
Sample Identification Sample Location Sample Date		TEEL #5 C Upgradient 12/9/2009	TEEL #7 A  Wetland 12/9/2009	TEEL #7 B  Wetland 12/9/2009	TEEL #7 C  Downgradient 12/9/2009	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria		
Parameter	Units		A040 3400 44 C 10 A S	XICONTOCINO SOCIOCIO	DARFORD-SAN-ROOM, 1945(C)					
SVOCs (8270C)	HARRIE	A SEATLES	TO SELLENGE	State of the last	TANKS SURE BANK	the state of the state of	STREET, MARKET STREET,	STATE RES DE		
1,2,4-Trichlorobenzene	ug/L	中的	40/2021	MD45/51	N2753	26	130	35		
1,2-Dichlorobenzene	ua/L	ND 85 m	MO 15 21	AD EL 81	MD DUS	160	820	420		
1,3-Dichlorobenzene	ug/L	MEGAL	ND (5 2)	ND (64)	ND (51.5)	69	350	420		
1,4-Dichlorobenzene	ug/L	NO M SE	MD-17.23	ME 15 13.	NO.15.5)	150	730	420		
1-Methylnaphthalene	ug/L	ALC: 1	ND i Zi	MD (5,71	MORNIN	NS	NS	NS		
2,4,5-Trichlorophenol	ug/L	MD (2.7)	10 (3.1)	ND (2.7)	ND (2.5)	NS	NS	NS		
2,4,6-Trichlorophenol	ug/L	745 H 11	(ID (1-2)	Ponde	MD/KIT.	91	460	1.4		
2,4-Dichlorophenol	ug/L	NO FEAT	HD II T	ND 11.53	<b>利亚拉拉</b>	340	1,700	77		
2.4-Dimethylphenol	ug/L	NO	ND (1.2)	AD IT IS	图 (11 年)	130	660	380		
2,4-Dinitrophenol	ug/L	ND (2.7)	NE (5.4)	MD (9.7)	は砂の	320	1,600	0.05		
2,4-Dinitrotoluene	ug/L	(ND (5.53)	利益に対	ND (5 *)	ND (1 1)	130	660	69		
2,6-Dinitrotoluene	ug/L	ND IT IS	ND (1.2)	M5 (1 (1	NO MUST	200	990	0.05		
2-Chloronaphthalene	ug/L	NC 15 1	ND:112)	ND(15.5)	HO (1.1)	NS	NS	1,000		
2-Chlorophenol	ug/L	- NO 11 11	ND (1.2)	NOTE:	ND PERSON	NS	NS	NS		
2-Methylnaphthalene	ug/L	NDMA	190 (5.2)	NO (5 th	NO (5.3)	NS	NS	NS		
2-Methylphenol(o-Cresol)	ug/L	ND(0.1)	HD (5.2)	REMAN	ND 3 55	NS	NS	NS		
2-Nitroaniline	ug/L	ND (27)	MD /E.Y	NO (2.7)	ND (2.6)	NS	NS	NS		
2-Nitrophenol	ua/L	MD (1.7)	MG (1.2)	ND (E.T)	ND (11,11)	1,600	8,000	NS		
3&4-Methylphenol(m&p Cresol)	ug/L	ND /2.2	NG (2.5)	ND (2.3	NO 12.17	NS	NS	NS		
3,3'-Dichlorobenzidine	ug/L	-MG(15.1)	MD (1.2)	WD (1.3)	NO (LS)	NS	NS	NS		
3-Nitroaniline	ug/L	NO (2.7)	10 (5.5)	WD (2.7)	ND (2,5)	NS	NS	NS		
4,6-Dinitro-2-methylphenol	ug/L	NO (2.7)	NO (3 f)	MD (2.7)	ND (2.6)	16	80	13		
4-Bromophenylphenyl ether	ug/L	MORN	ND (1.2)	ND 1151	ND (1.1)	54	270	NS		
4-Chloro-3-methylphenol	ug/L	ND OUT	ND 75.21	METANT	ND (4.1)	NS	NS	NS		
4-Chloroaniline	ug/L	ND (1.7)	NO (1.2)	WE (FT)	ND IS 11	NS NS	NS NS	NS		
4-Chlorophenylphenyl ether	ug/L	(FA)	KS M(Z)	NO (1,1)	ND (M.S)			NS		
4-Nitroaniline	ug/L	ND (2.7)	NO (3.1)	ND (2.7)	ND (2.8)	NS 470	NS 2,300	NS NS		
4-Nitrophenal	ug/L	A(0.01.1) A(0.11.1)	ND (1.2)	ND (S.1)	ND (1-1)	17	83	670		
Acenaphhene	ug/L ug/L		40 / 12 V		NOTES	NS NS	NS	NS		
Acenaphthylene		NO (1.1)		201	17/7/2017	NS	NS NS			
Anthracene	ug/L	NO final	NO (1.2)	ND (1.1)	ND (1.1)	NS	NS NS	8,300 NS		
Azobenzene	ug/L ug/L	MC IS 11	NC (5.2)		MD (5.1)	0.1	0.5	0.0038		
Benzo(a)anthracene		ND 11 11	ND (1.2)	NG (1.1)	MD (5.1)	NS	NS	0.0038		
Benzo(a)pyrene	ug/L ug/L	NO 11 1	NO (1.2)	AD (1.1)	145 tr 11	NS	NS	0.0038		
Benzo(b)fluoranthene		ND (1.1)	10 (* 2)	MD m fi	MD (1 1)	NS	NS	0.0038 NS		
Benzo(g,h,i)perylene	ug/L ug/L	30111	ND (1.2)	AIC (3.5)	ND (S. 1)	NS NS	NS	0.0038		
Benzo(k)fluoranthene Benzoic acid	ug/L	NC /1 0.	MD (10 3)	NO (10 S)	ND-MD.61	NS	NS	NS NS		
	ug/L	ND II.AL	ND (1.2)	ND 1 11	NO HER	NS	NS	NS NS		
Benzyl alcohol	ug/L	ND to 31	ND (1.2)	MEINT	ND (1 5)	NS	NS	NS		
bis(2-Chloroethoxy)methane	ug/L	NO (1.1)	NO 11.21	NO (1.1)	MO (1 1)	6,000	30,000	0.03		
bis(2-Chloroethyl) ether bis(2-Chloroisopropyl) ether	ug/L	NE (1.5)	ND (1.2)	ND (5 To	ND M.31	NS	NS	1,400		
bis(2-Ethylhexyl)phthalate	ug/L	ND (1.11	1.2	KD (1-1)	MD (1.1)	910	4,500	1.2		
Butylbenzylphthalate	ug/L	0.00	NO (1.2)	NO 15 15	ND (3.3)	35	140	150		
Carbazole	ug/L	AD 1111	ND II ZI	ND (1.1)	MC 15 37	NS NS	NS NS	NS		
Chrysene	ug/L	NO (3.5)	MO (1.21	NO (1.1)	ND 4.31	NS	NS	0.0038		
Dibenz(a,h)anthracene	ug/L	NO IL II	ND /5 21	ND (5.1)	NO 11.51	NS	NS NS	0.0038		
Dibenzofuran	ug/L	NO (1.1)	NC (* 2)	ND (1.1)	MD (1.5)	NS	NS	NS NS		
Diethylphthalate	ug/L	4D (1.1)	ND (1.21	ND (5.5)	NOM S	800	4,000	17,000		
Dimethylphthalate	ug/L	NOTE ST	ND '1.21	ND 11 II	NDM 1	NS	NS NS	NS		
Di-n-butylphthalate	ug/L	MOTER	MD 15.21	110 /5 11	NOT 1	21	110	2,000		
Di-n-octylphthalate	ug/L	NO (1 1)	NO (1.21	401111	ND PLY	NS	NS	NS NS		
Fluoranthene	ug/L	SID / 5.51	ND (1.2)	MD /1.11	10/5/11	40	200	130		
Fluorene	ug/L	MOON	N/3 // 21	ND 11 33	NEW (	NS	NS	1,100		

## Table 4,13-2 Analytical Results for Surface Water Samples Teel 7 Wellsite

Dimock Township, Susquehanna County, PA

						Surfa	ce Water Quality Cr	iteria <sup>1</sup>
Sample identification Sample Location Sample Date	Units	TEEL #5 C Upgradient 12/9/2009	TEEL #7 A  Wetland 12/9/2009	TEEL #7 B  Welland  12/9/2009	TEEL #7 C  Downgradient 12/9/2009	Fish and Aquatic Life Criteria - Chronic	Fish and Aquatic Life Criteria - Acute	Human Health Criteria
SVOCs (8270C)		Tipe VX Republic	Service Communication of the C	A MICHAEL STATE	Colonia de	CONTRACTOR OF THE PARTY.		Strate Land
Hexachloro-1,3-butadiene	ug/L	10016	NE P. 21	HQ (1.1)	10/1/21	2	10	0.44
Hexachlorobenzene	ug/L	MD (4,1)	MD # 2:	NOT 55,55	140 (3.1)	NS	NS	0.00028
Hexachlorocyclopentadiene	ug/L	NE 11 5	NO!" 21	40 15 15	15-15-11	1	5	40
Hexachloroethane	ug/L	MEXIC 11	M3 2* 2*	ND AT A	ND (11)	12	60	1.4
Indeno(1,2,3-cd)pyrene	ug/L	AD E (I	ND 11.21	10111	NO 45 51	NS	NS	0.0038
Isophorone	ug/L	MD (5.5)	NO M 21	NO MA	WE MEE	2,100	10,000	35
Naphthalene	ug/L	XD (1.1)	ND (CS)	ND D.D	PRO DECEMBER	43	140	NS
Nitrobenzene	ug/L	ME IT IT	NO M2:	ND 11 Y	NOTE:	810	4000	17
N-Nilrosodimethylamine	ug/L	AID CE CO	MD 性度1	ND (1.1)	MP ISAL	3,400	17,000	0.00069
N-Nitroso-di-n-propylamine	ug/L	AID (1.51	ND F.2	WE fair	MD-(1.4)	NS	NS	0.005
N-Nitrosodiphenylamine	ug/L	NO HIS	ND 1-21	40112	16,31 (5)	59	3,000	3.3
Pentachlorophenol	ug/L	10 (2.7)	NE MISS	ND (2.7	ND (2.5)	0.00589	0.00768	0.27
Phenanthrene	ug/L	NO IS 31	MD (1,2)	eID (5)31	102 (1.5)	1	5	NS
Phenol	ug/L	7F (1) CIN	ND [1.2]	ND (VV)	ME AR AL	NS	NS	21,000
Pyrene	ua/L	ND M. TI	NE IS 21	ACT 1 33	MD 75 15	NS	NS	830

#### Notes:

5= As total xylenes.

= Results exceed SHS R-U MSC and/or applicable surface water quality criteria.

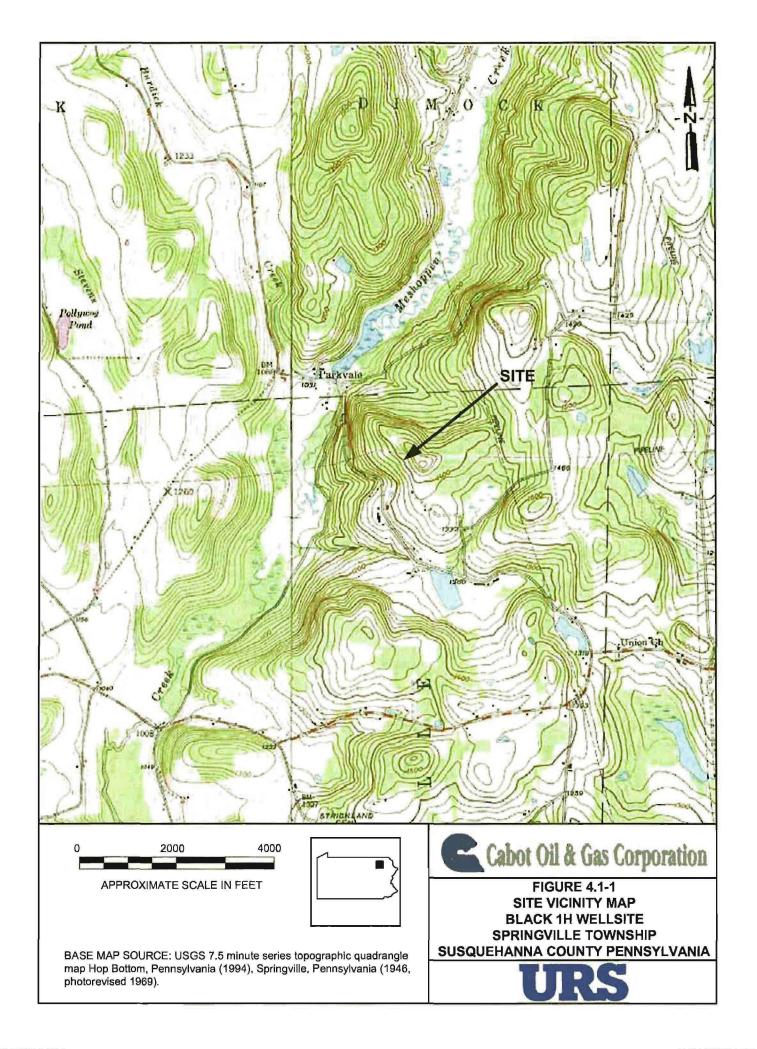
<sup>1=</sup> Values from 25 Pa Code Chapter 93.8, Table 5; values assume a pH of 8.5 SU and hardness of 100 mg/L, where applicable. Values provided for chromium are for chromium III. Values for chloride, TDS, pH, manganese and Iron from 25 Pa Code Chapter 93.7, Table 3.

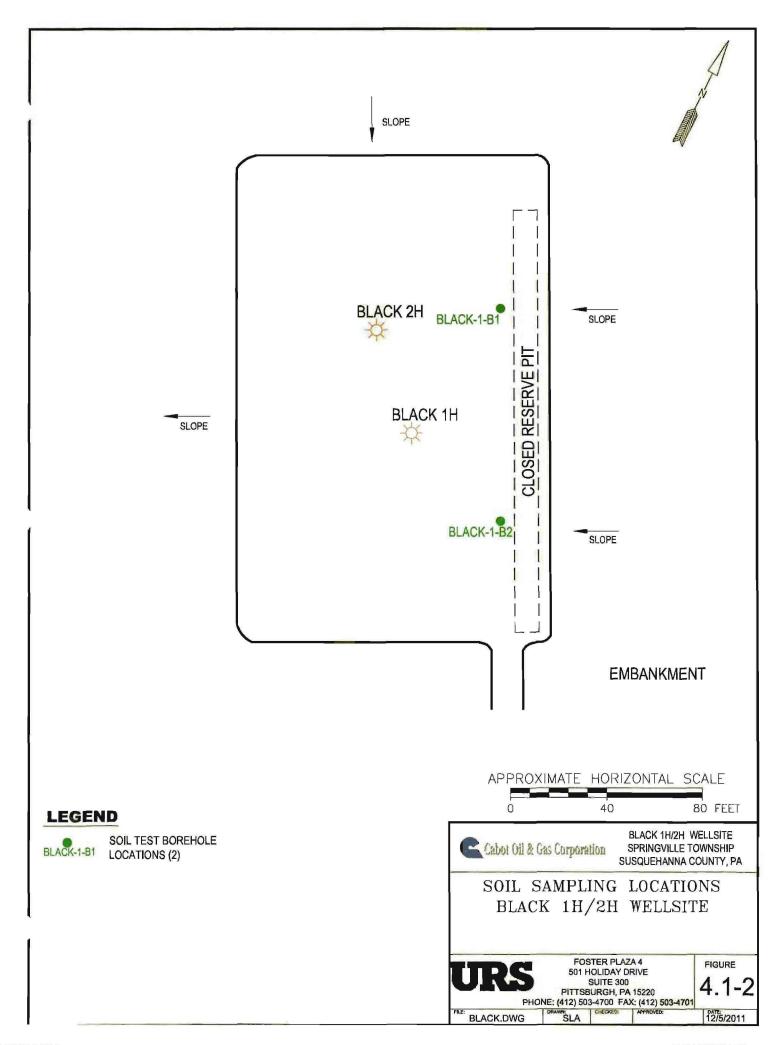
2= ND (1.0) = Parameter not detected at the detection limit specified in parentheses.

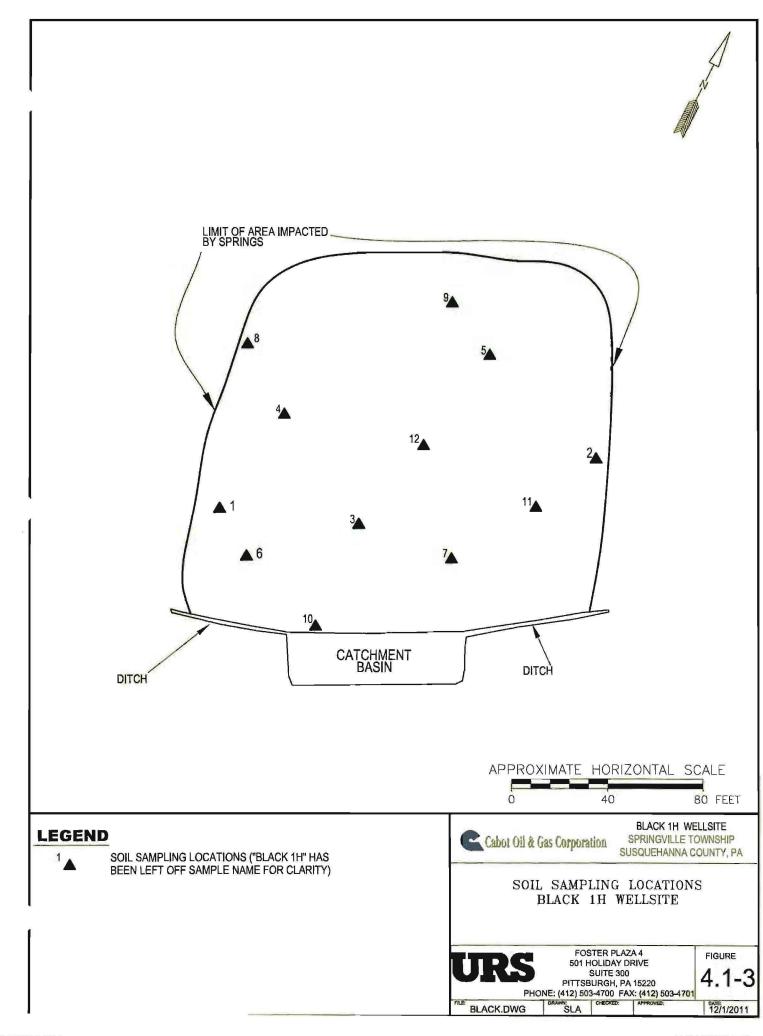
<sup>3=</sup> No Standard.

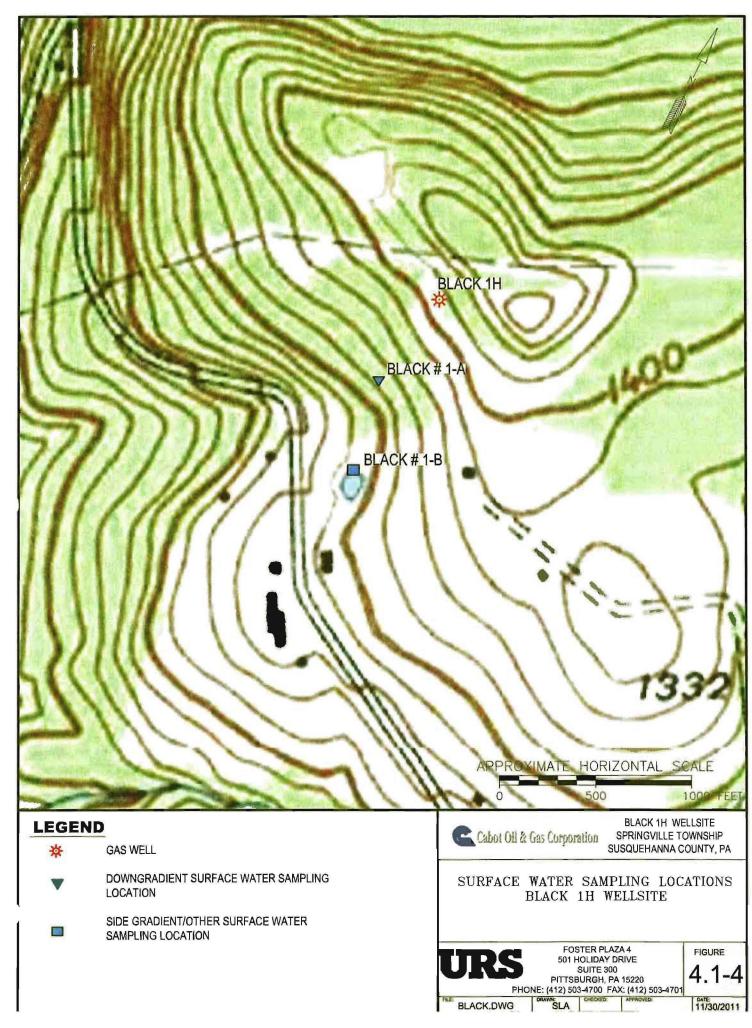
<sup>\*\*</sup> The specific water quality criteria for total recoverable iron is for aquatic life uses and is expressed as a 30-day average concentration. The water quality criteria for human health is expressed as dissolved iron. See 25 PA Code Section 93.7.

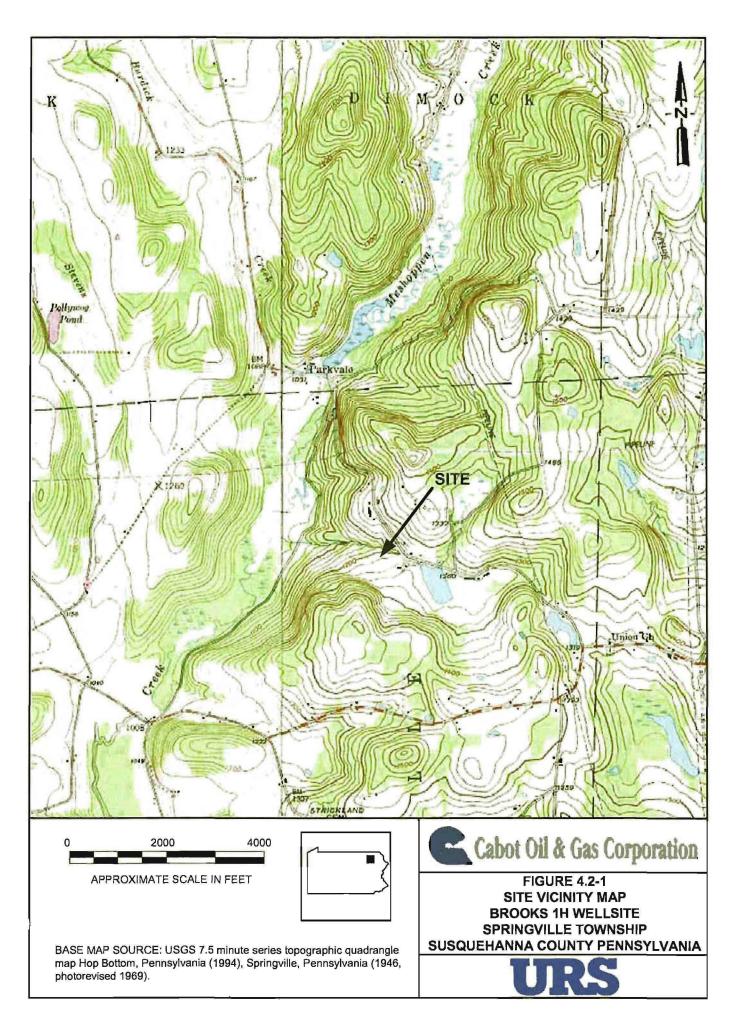
<sup>=</sup> As total xylenes.

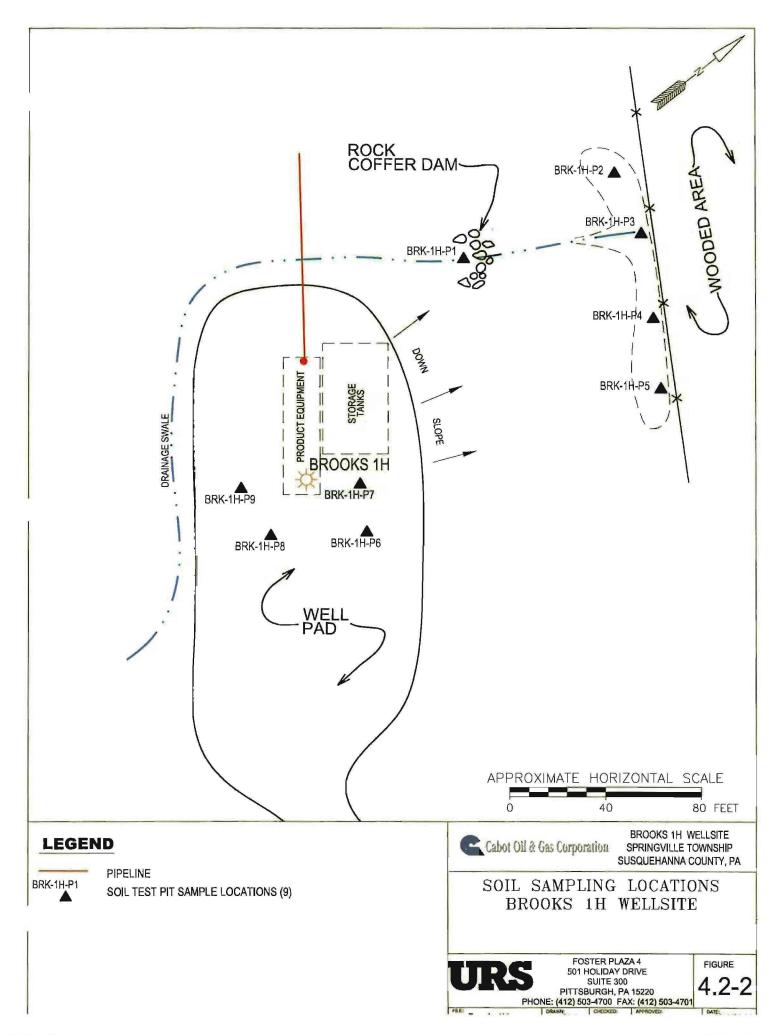


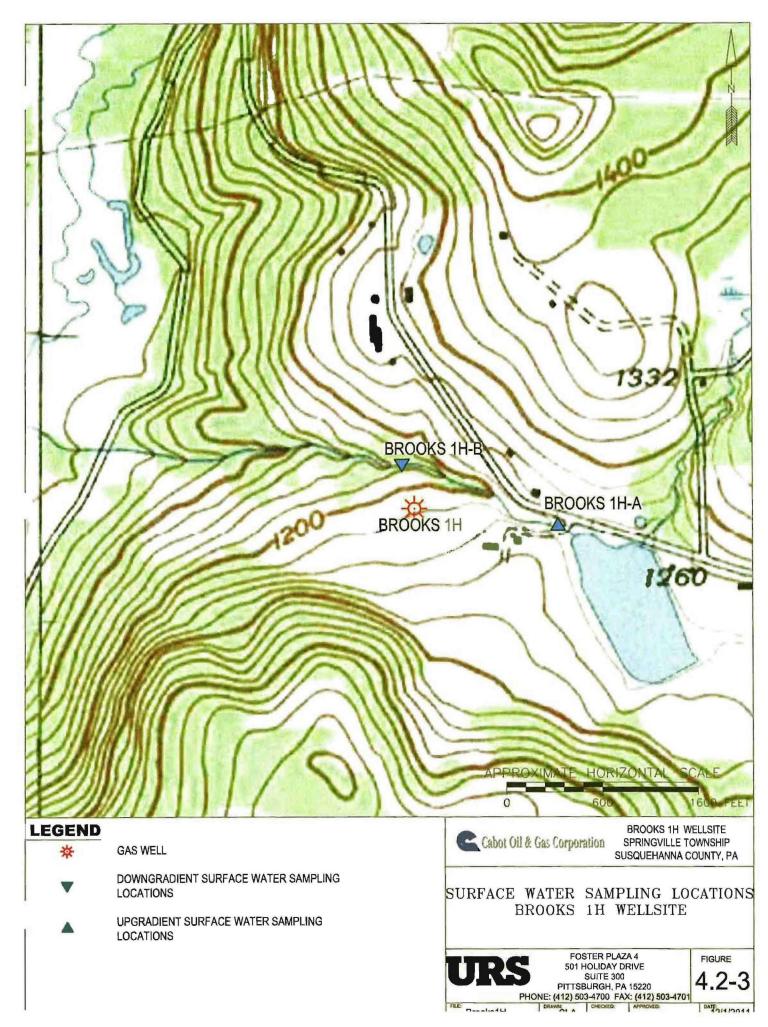


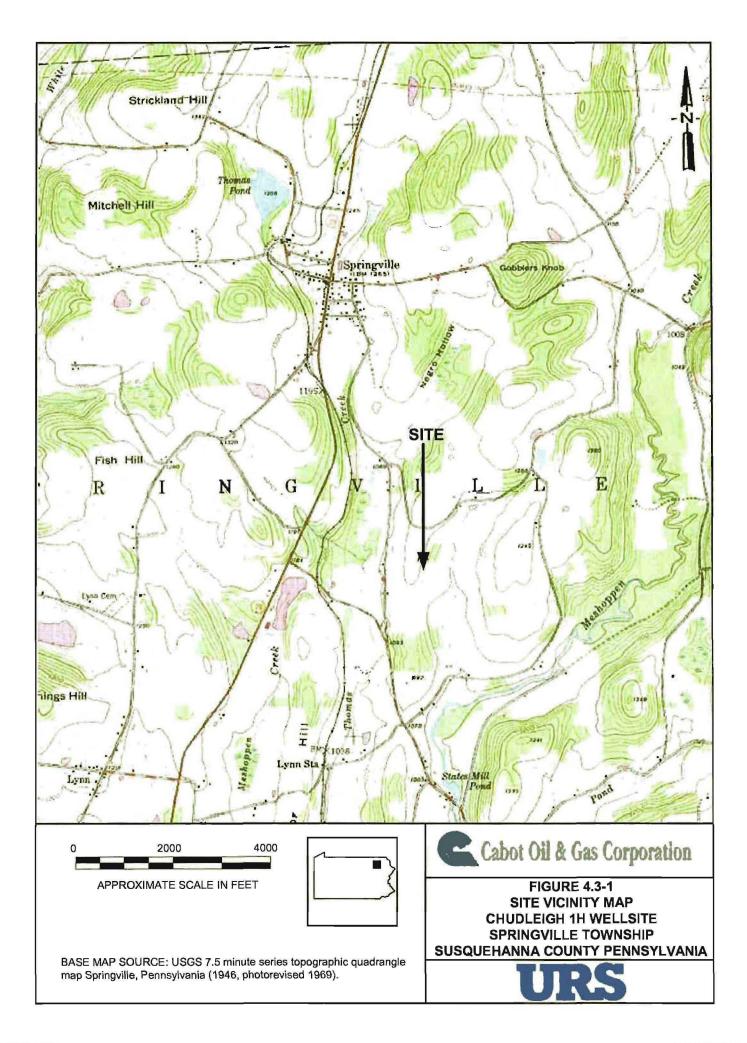


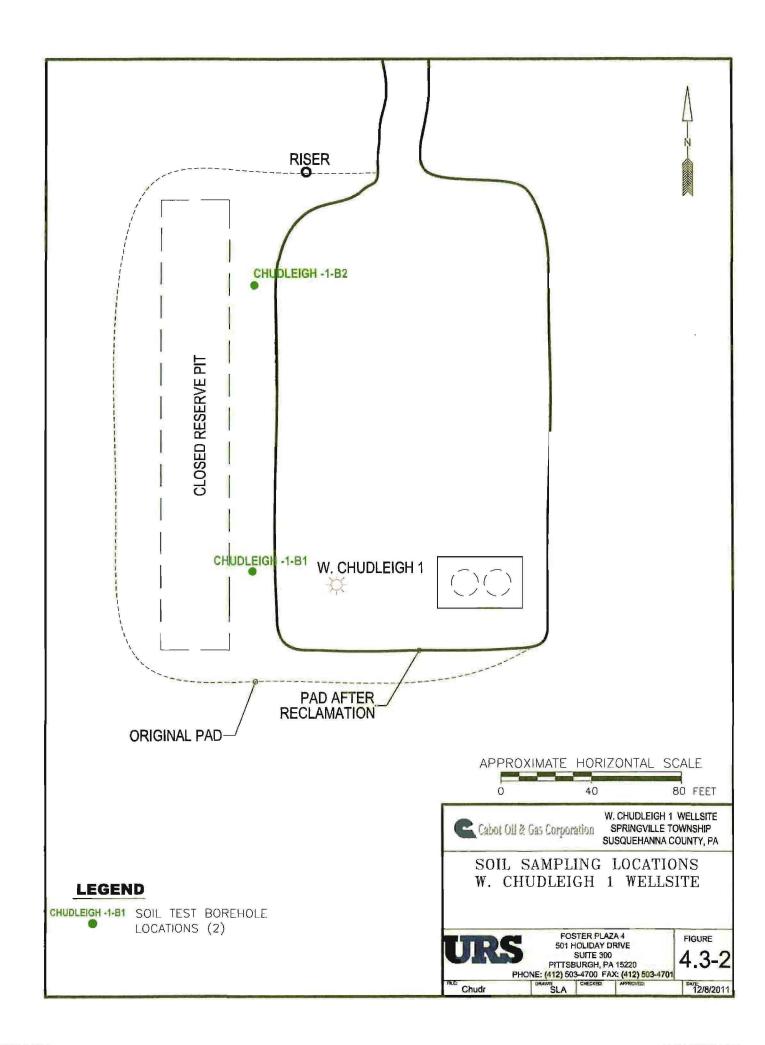


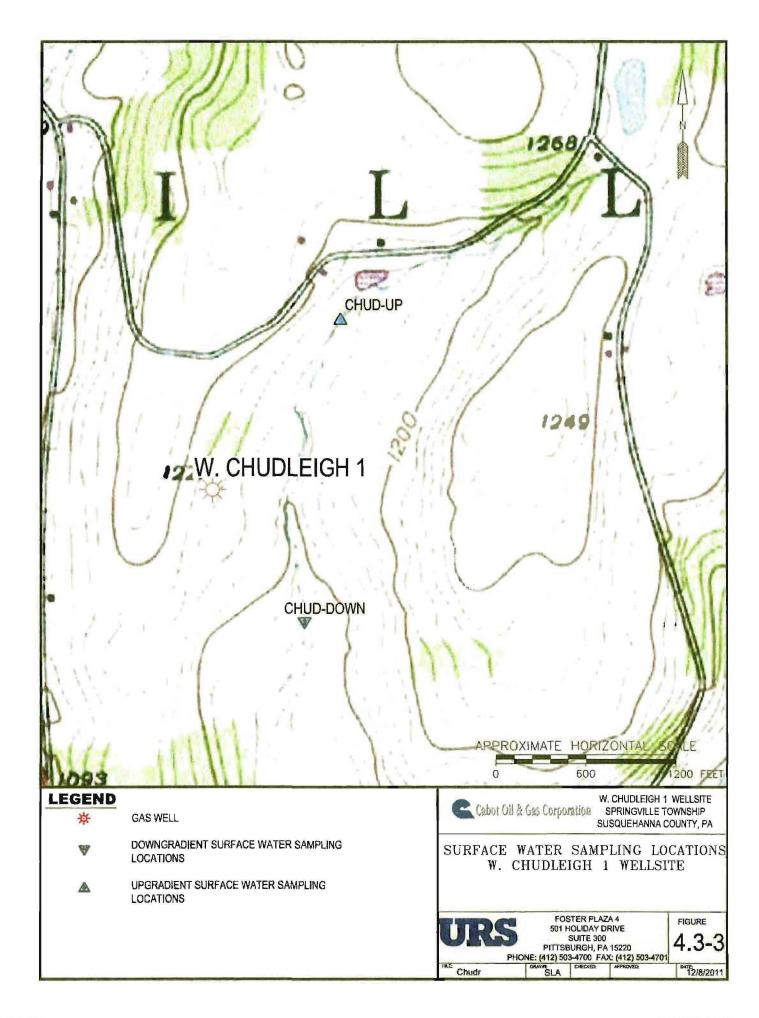


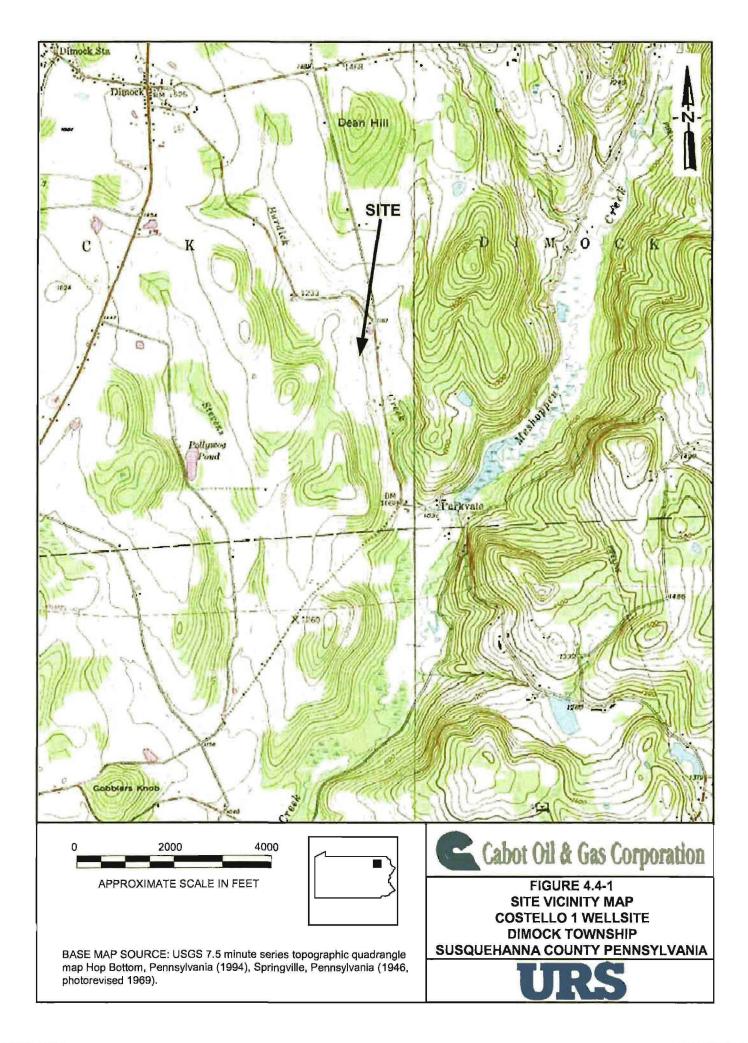


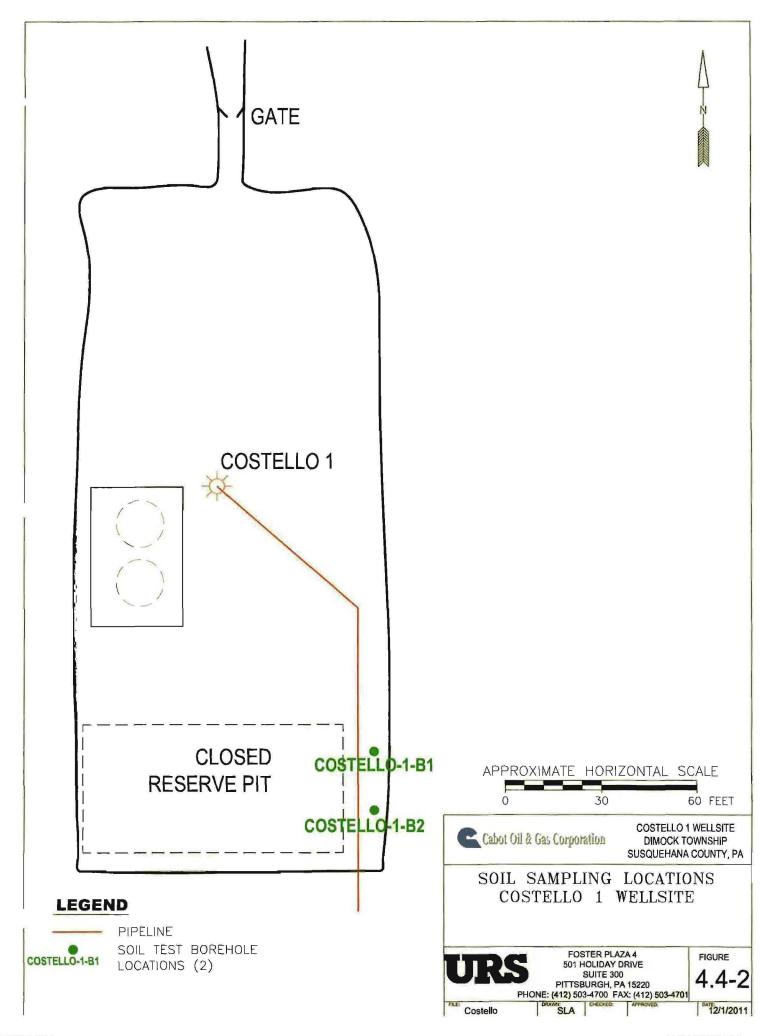


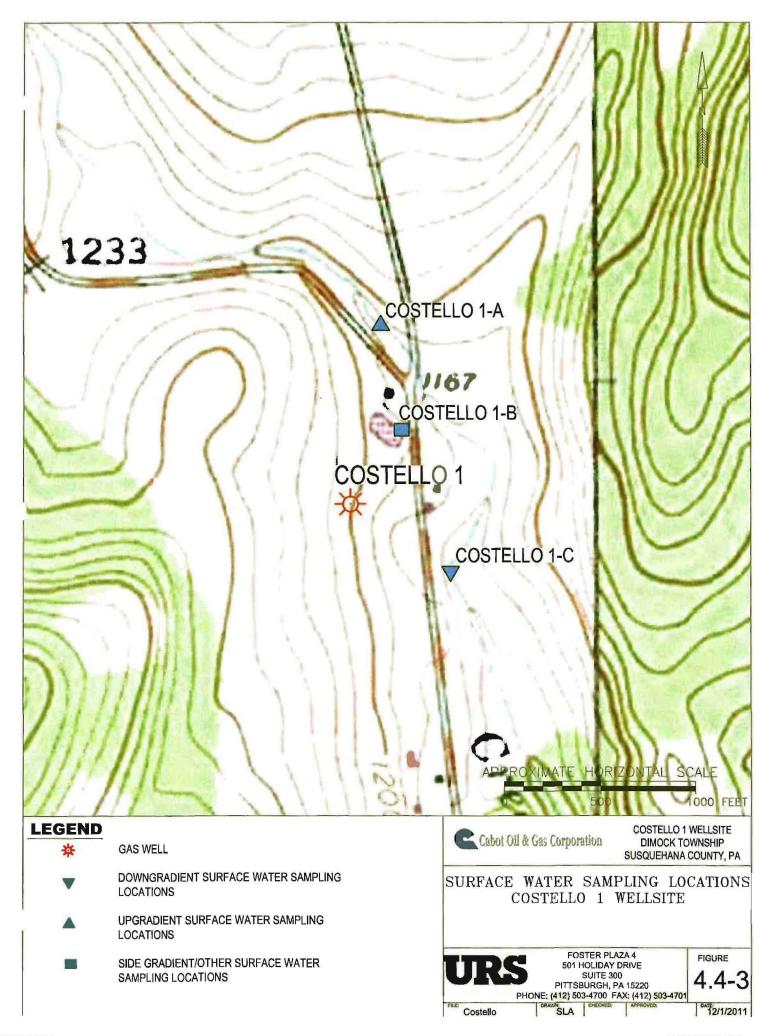


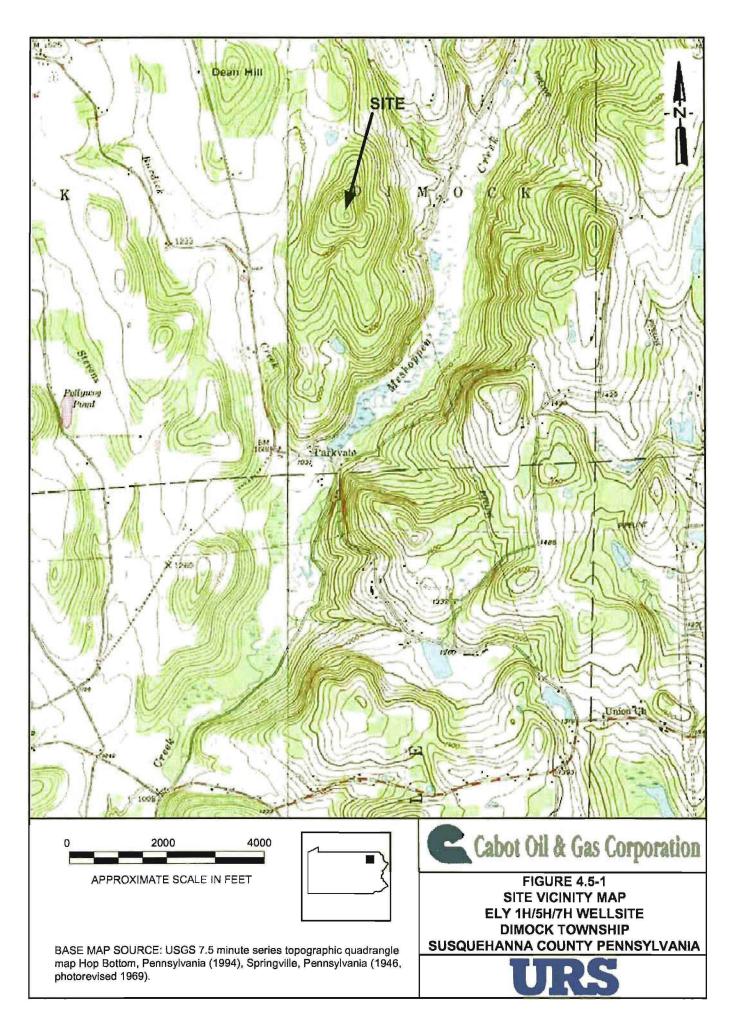


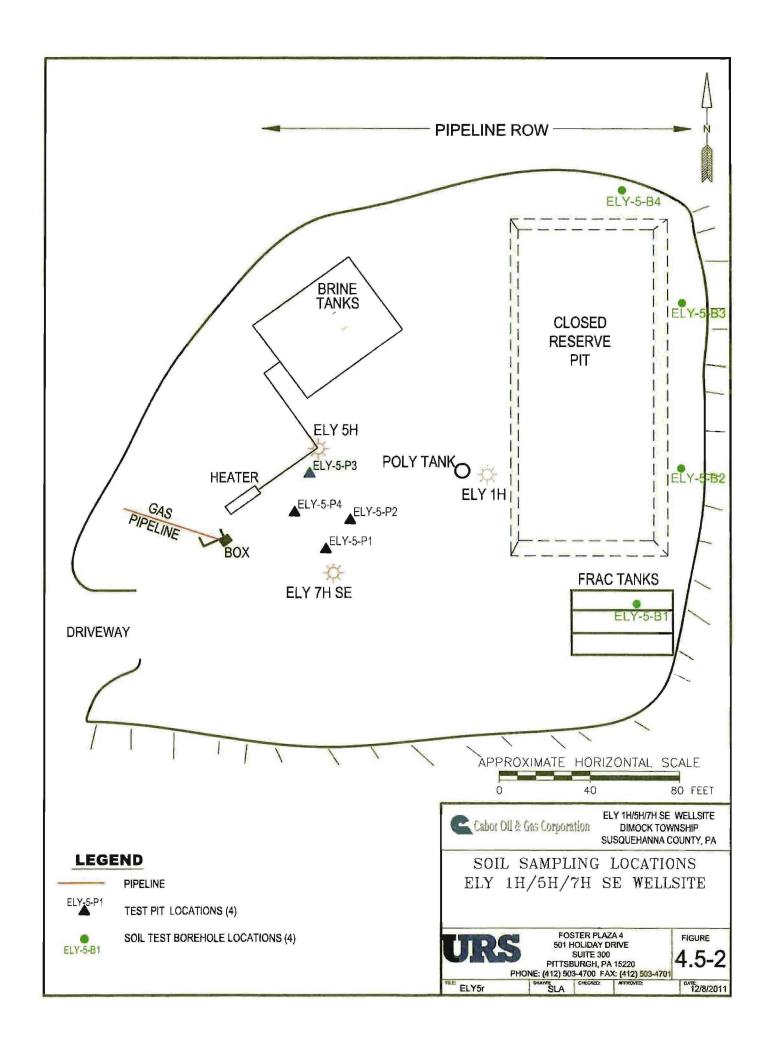


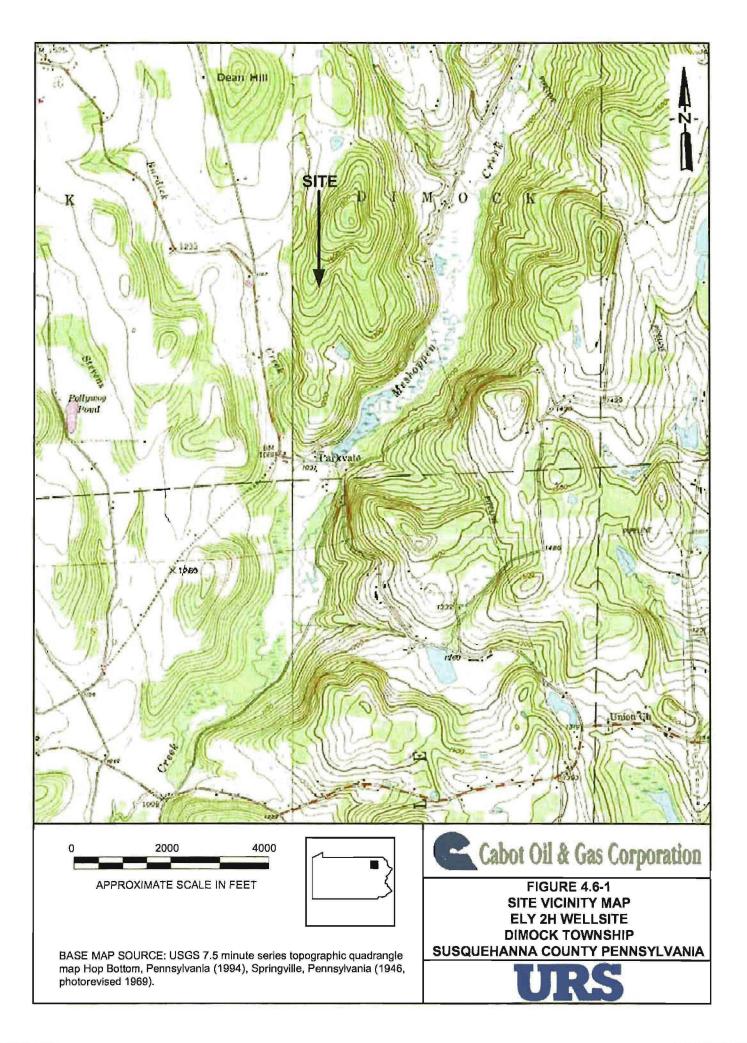


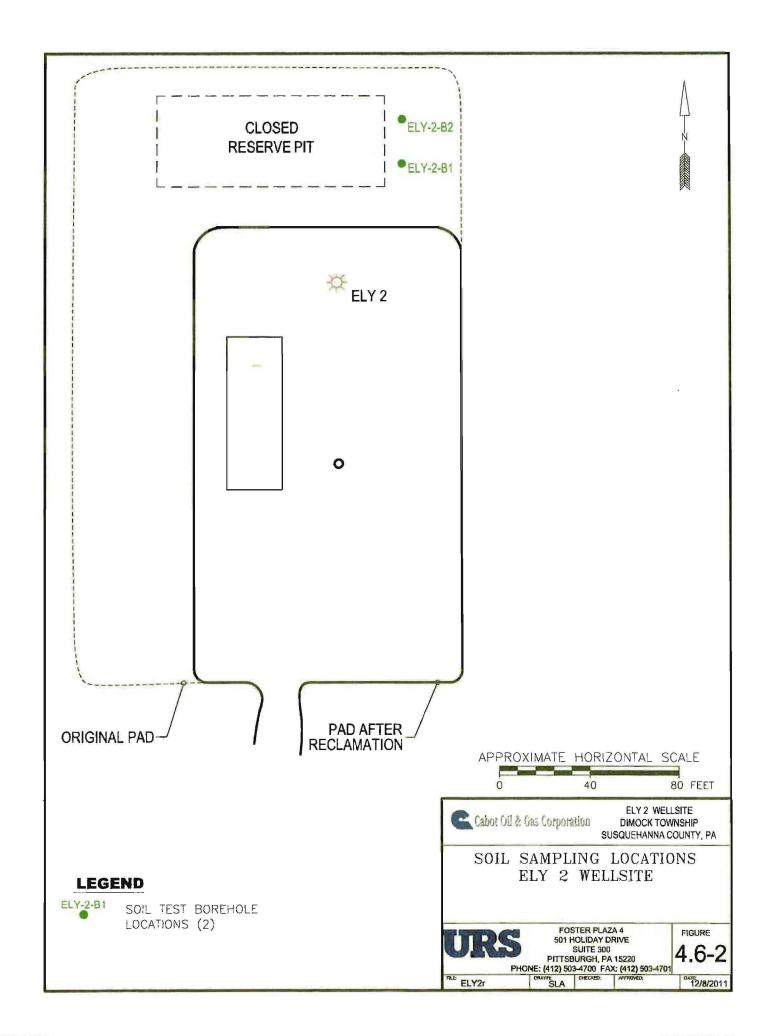


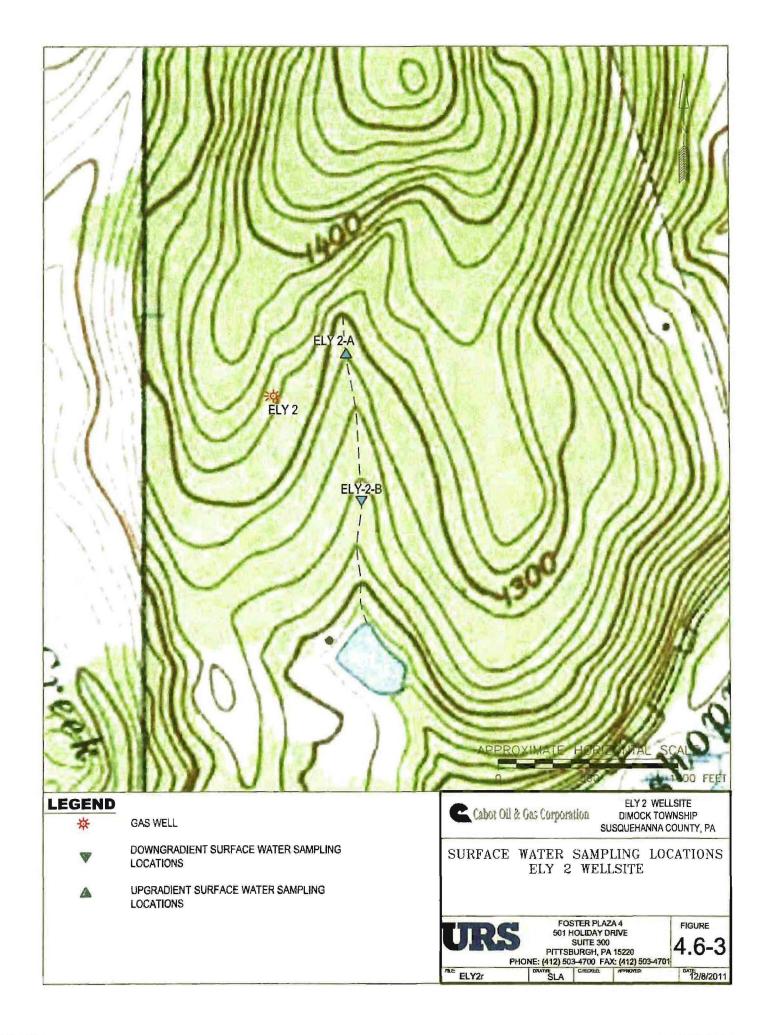


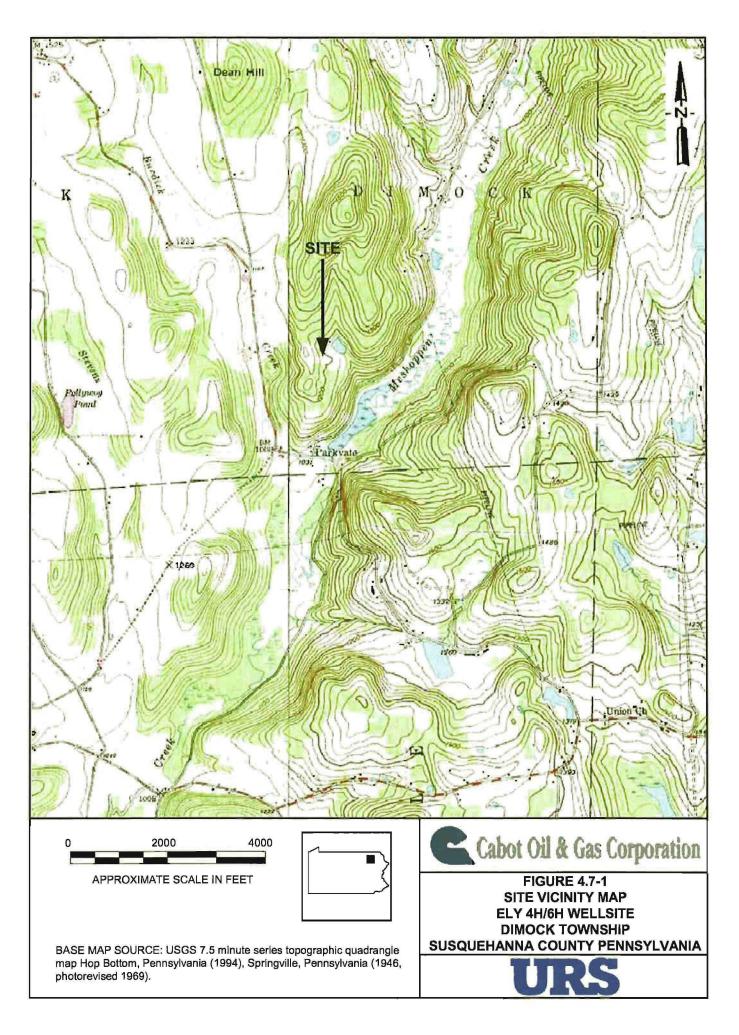


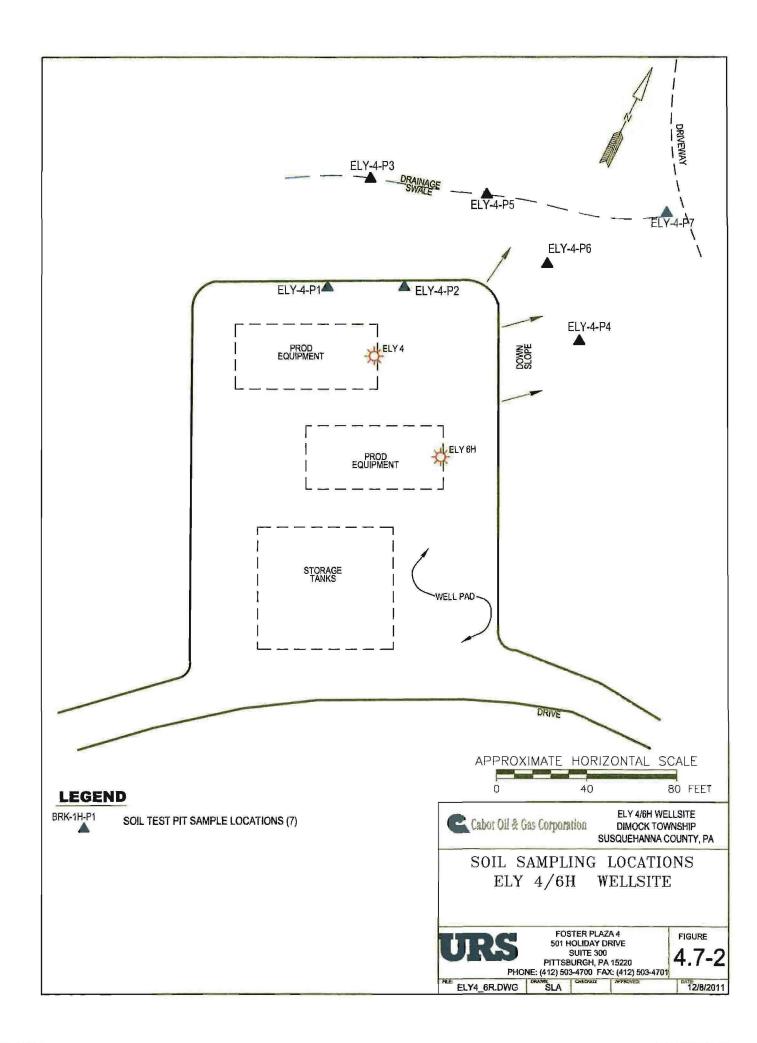


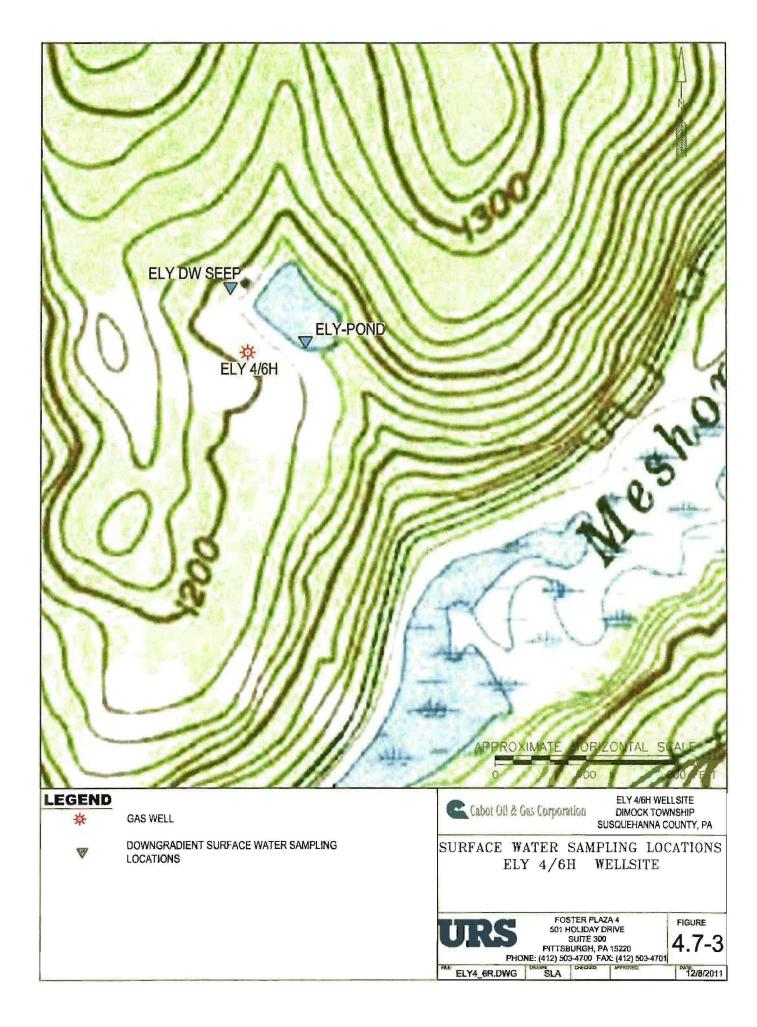


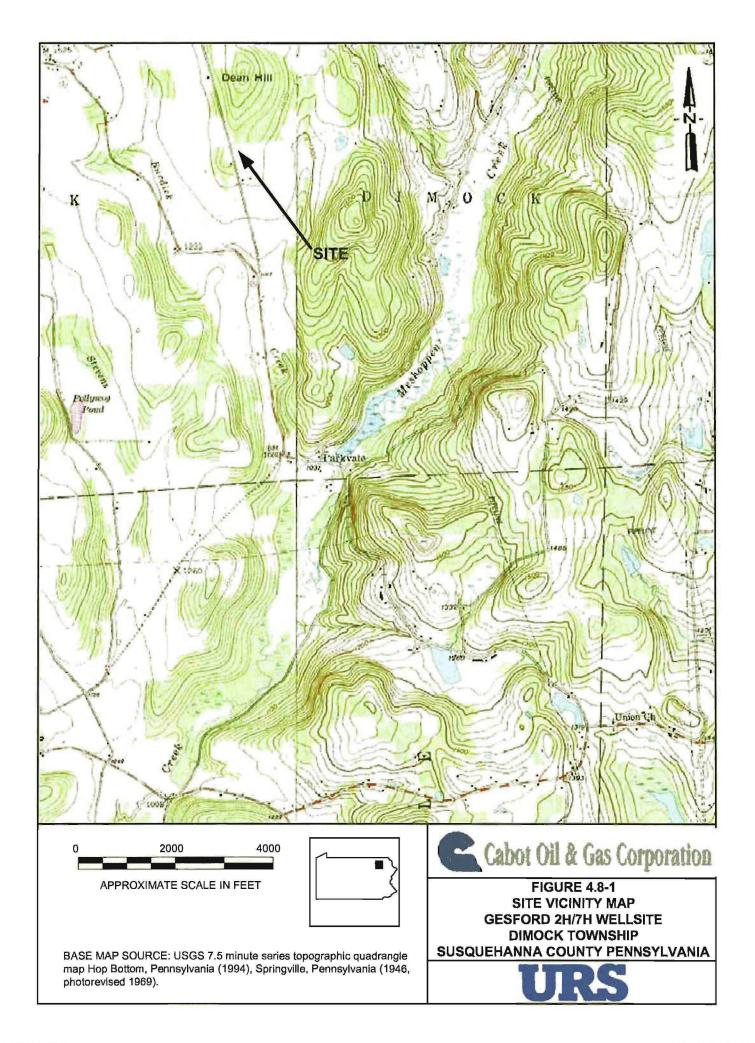


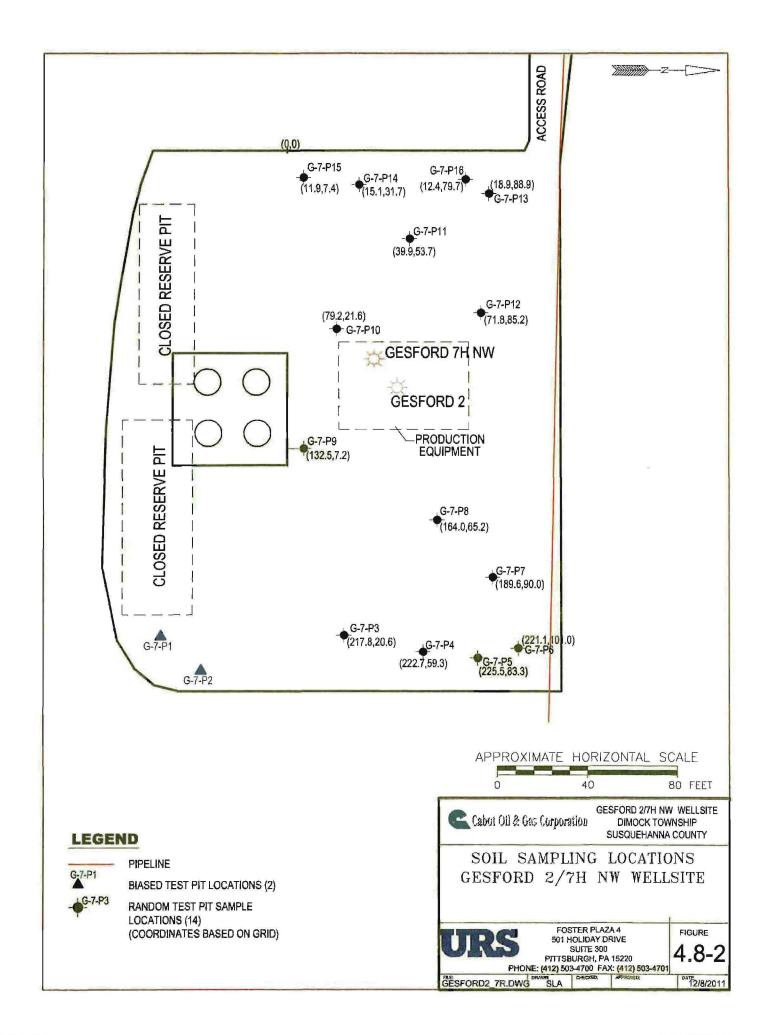


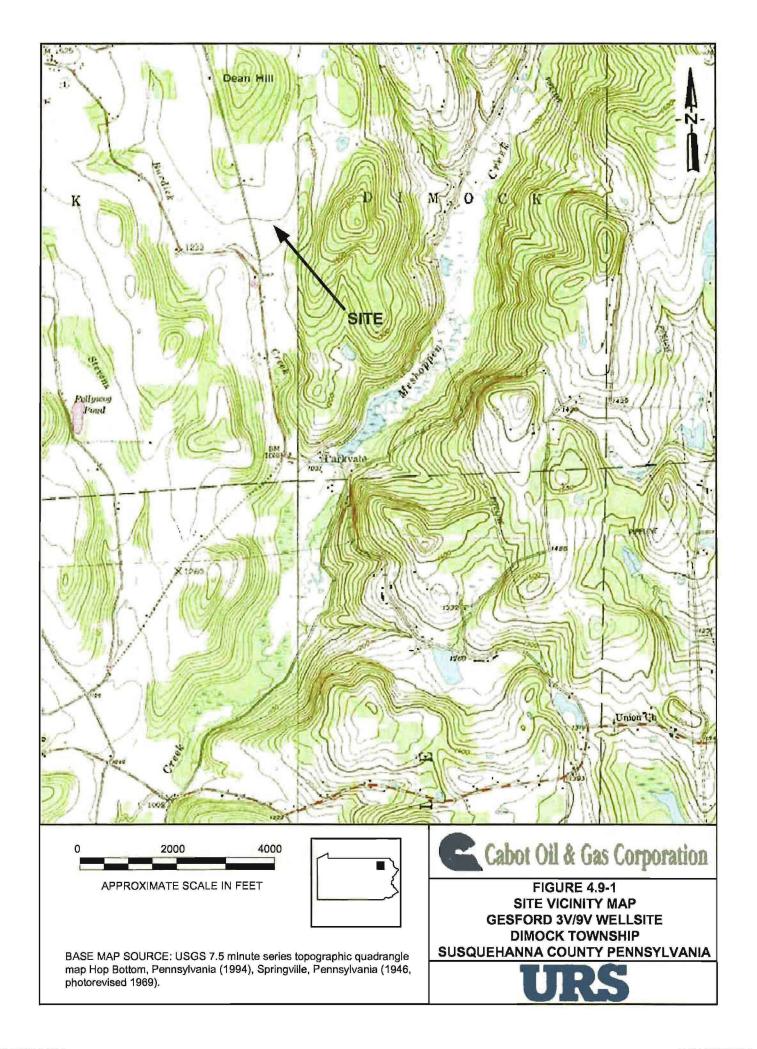


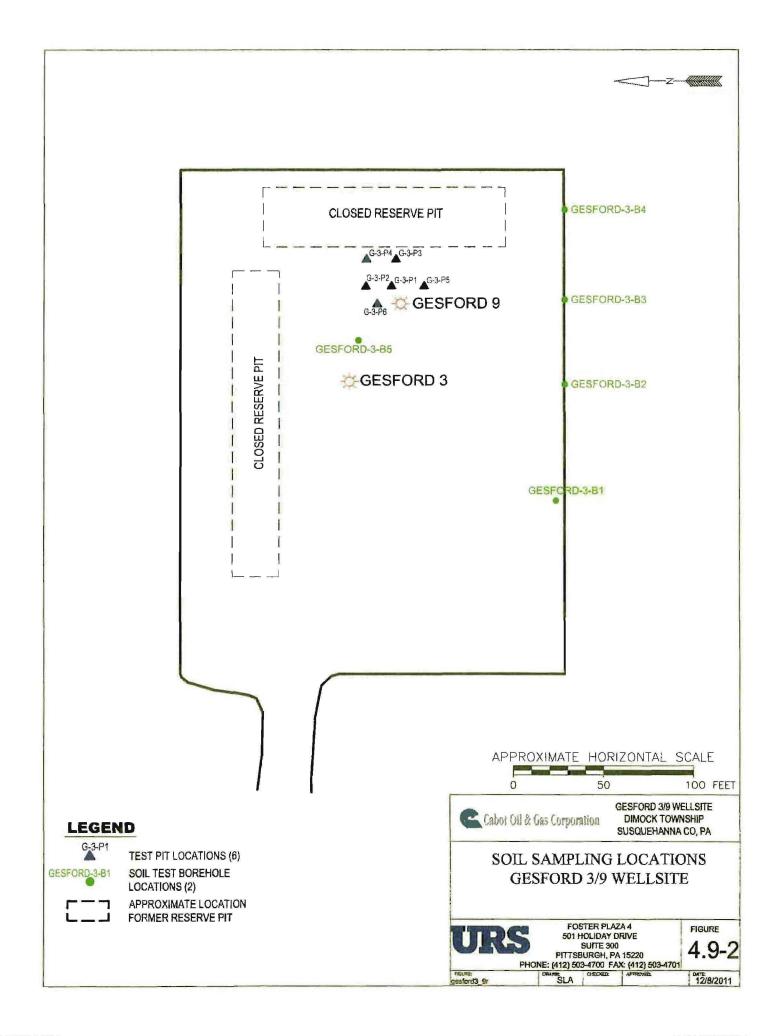


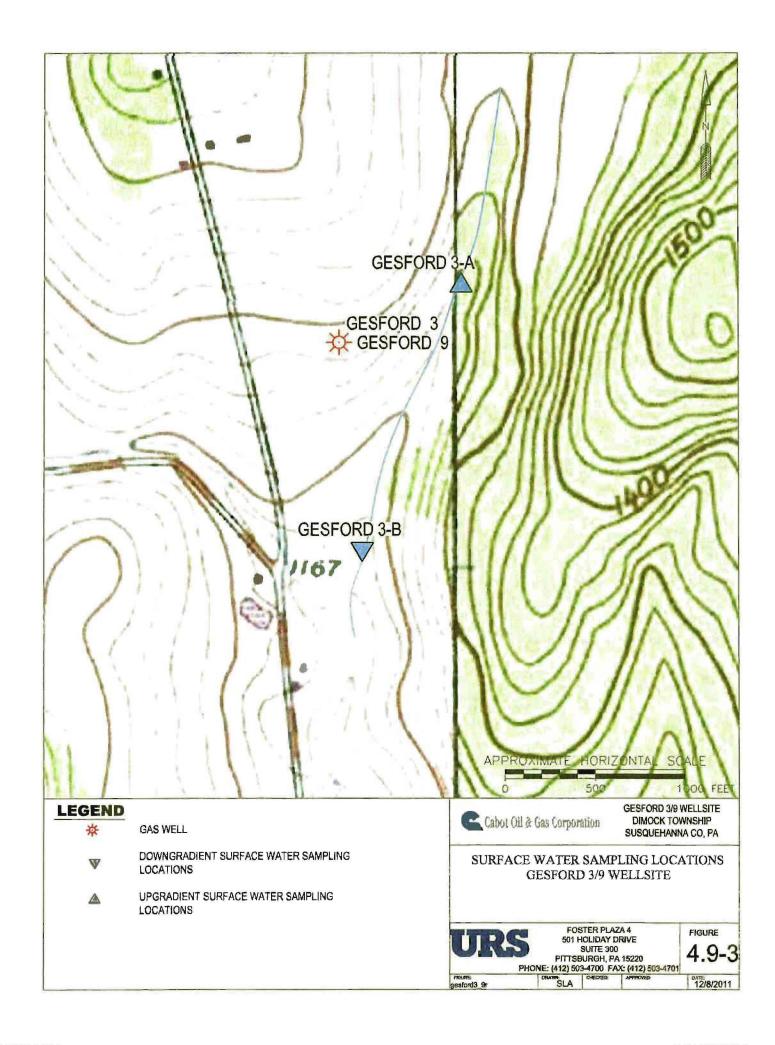


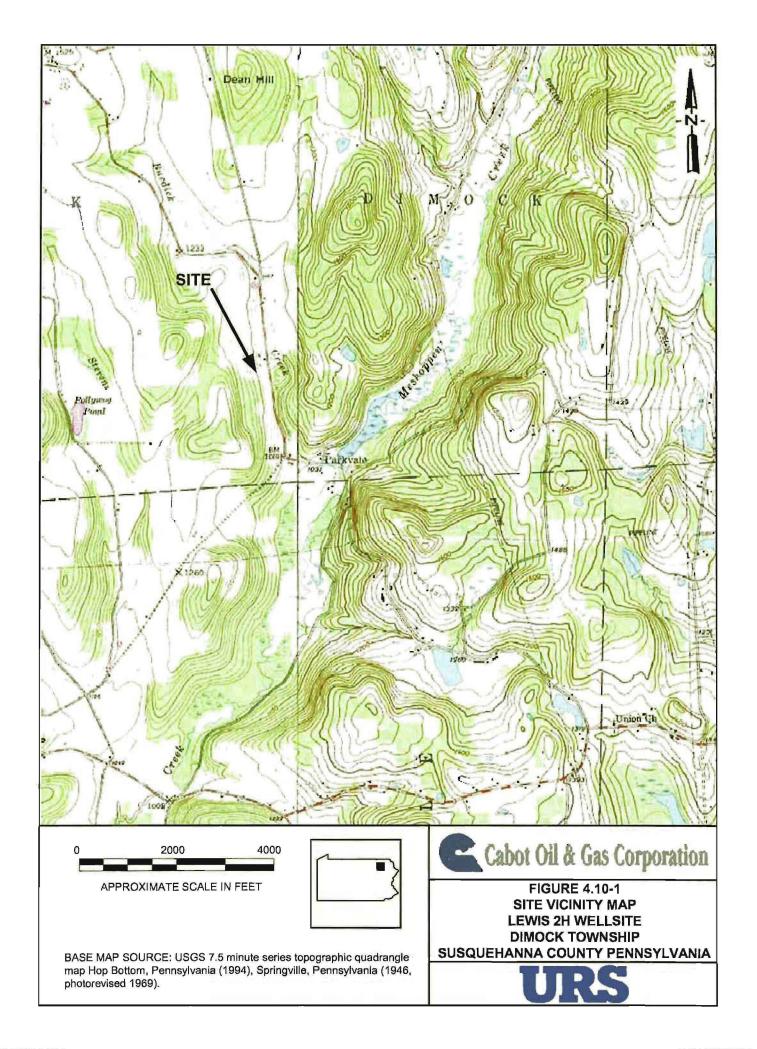


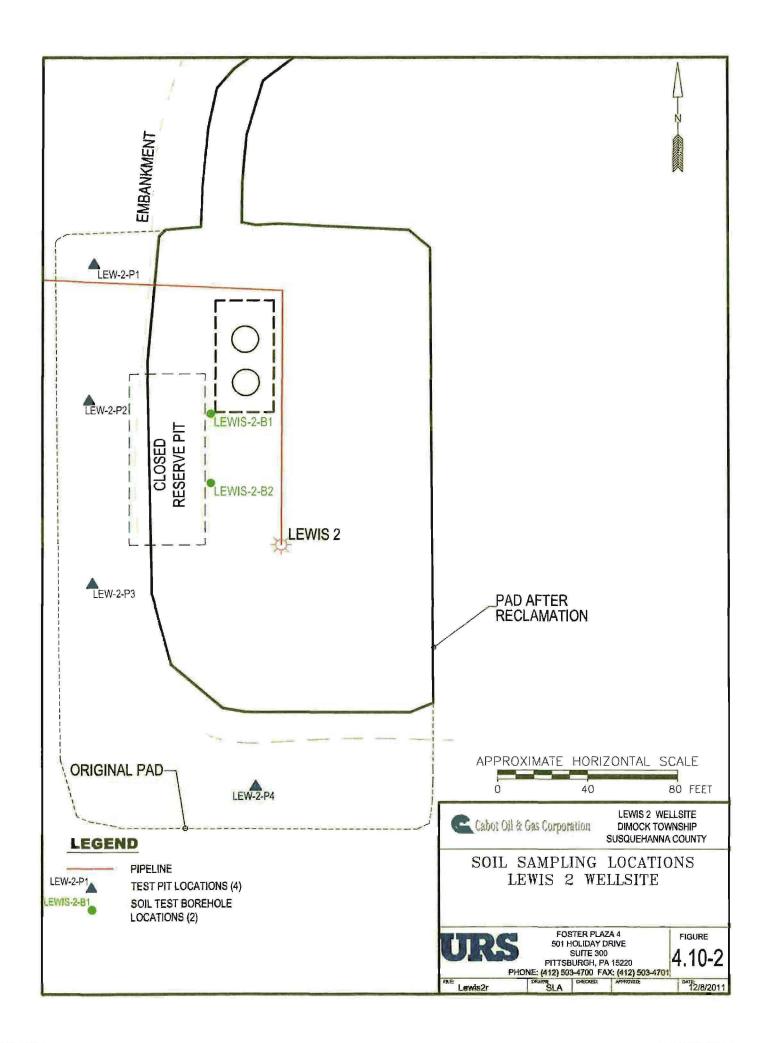


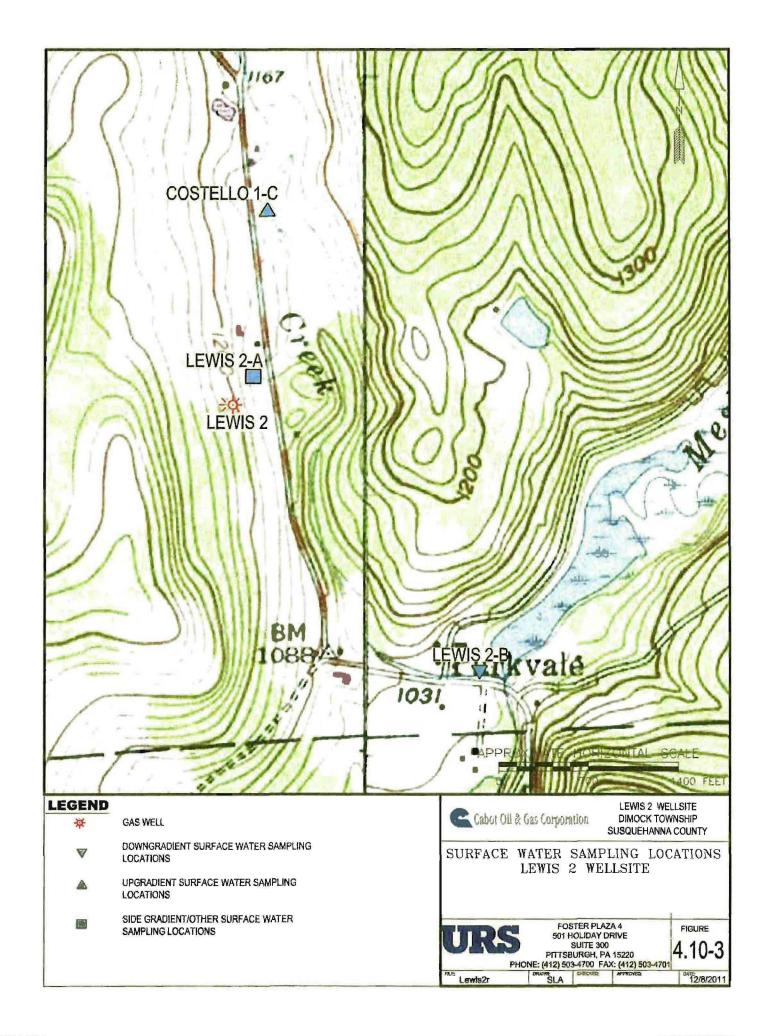


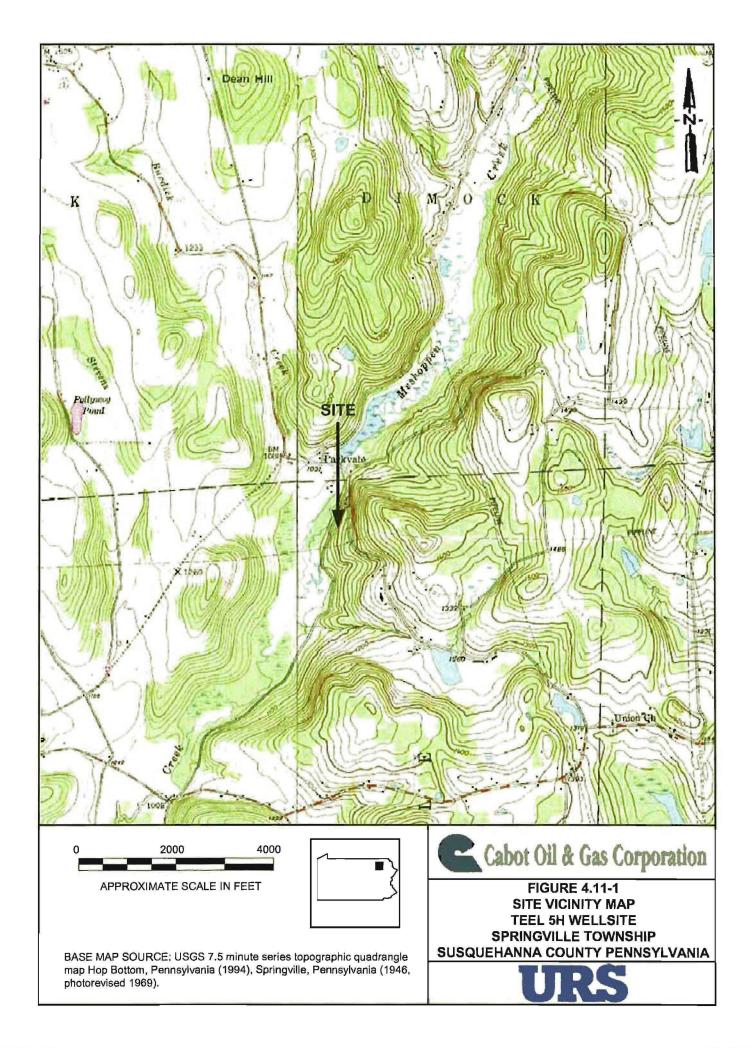


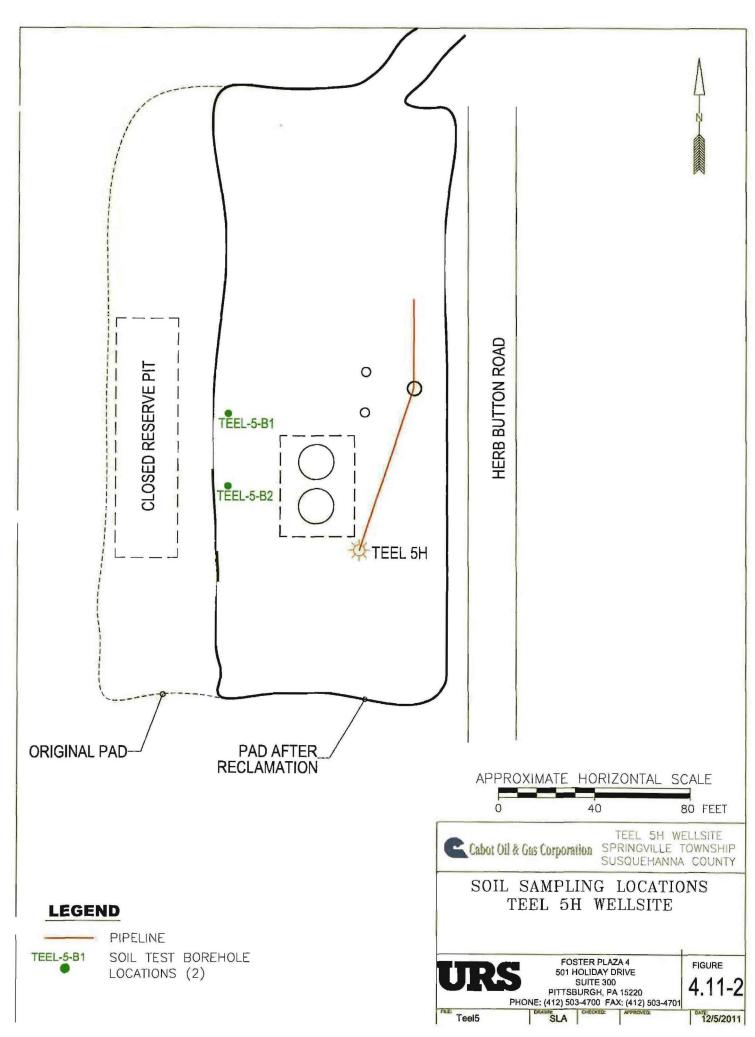


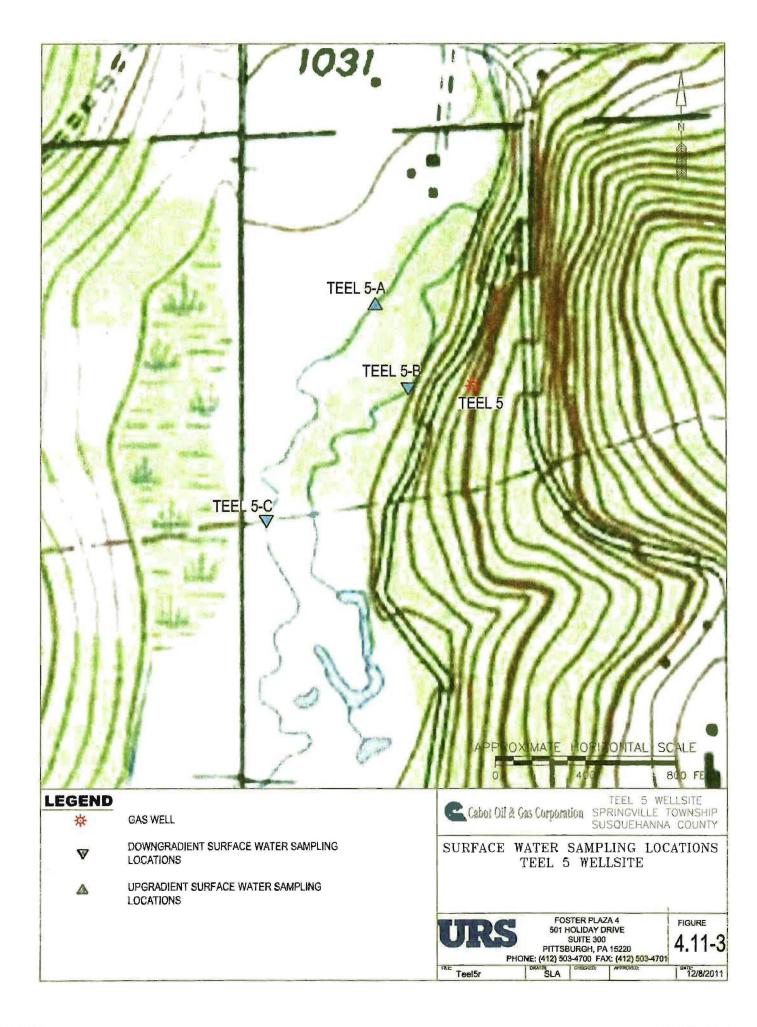


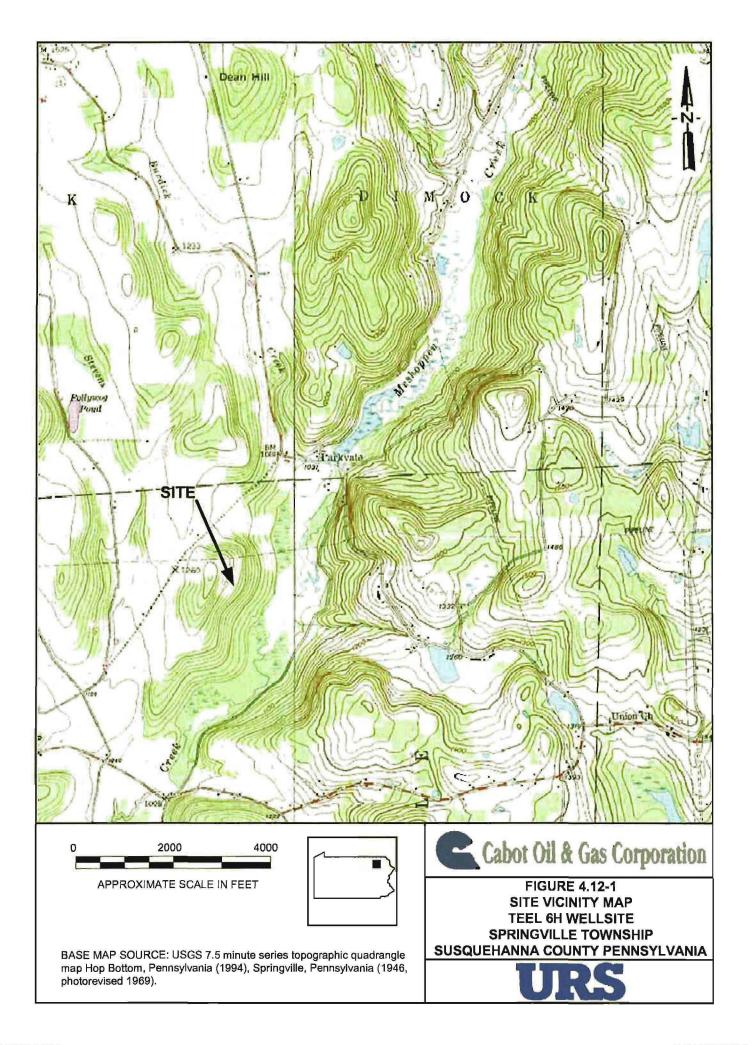


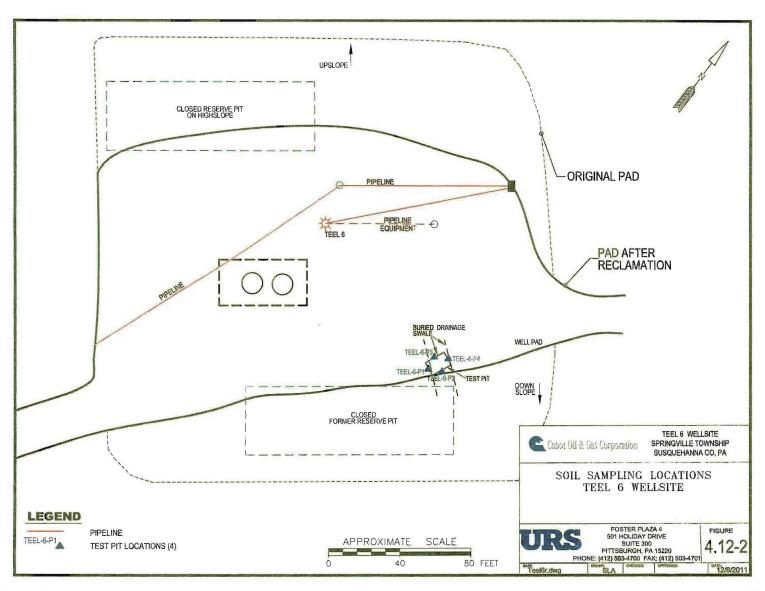


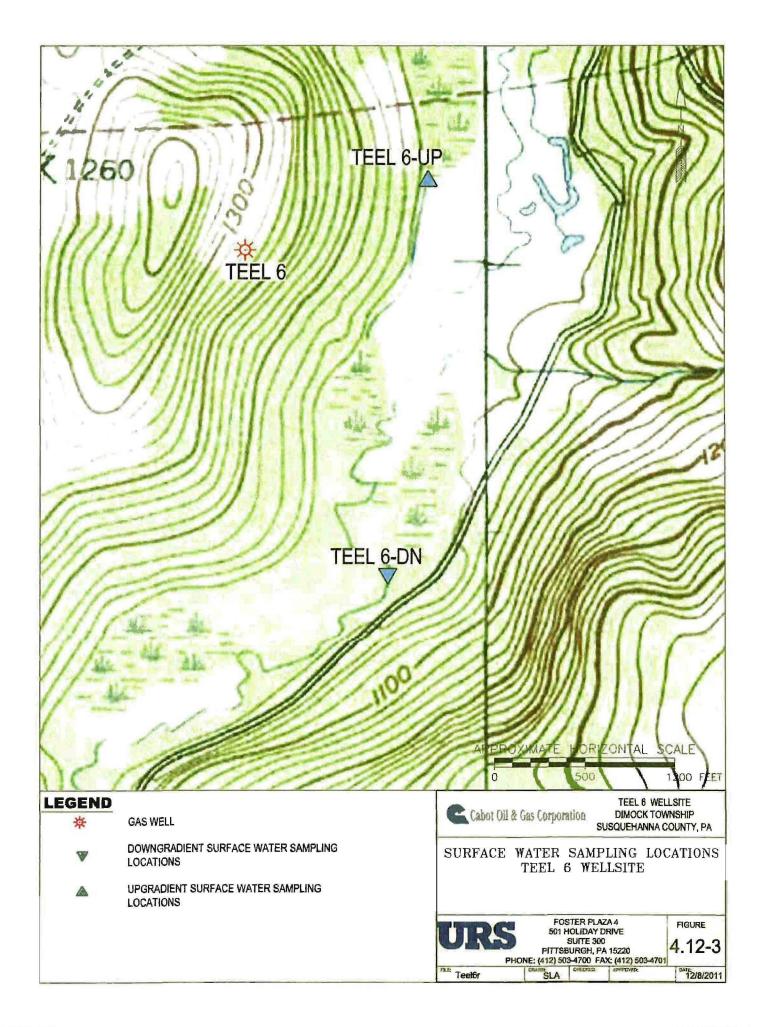


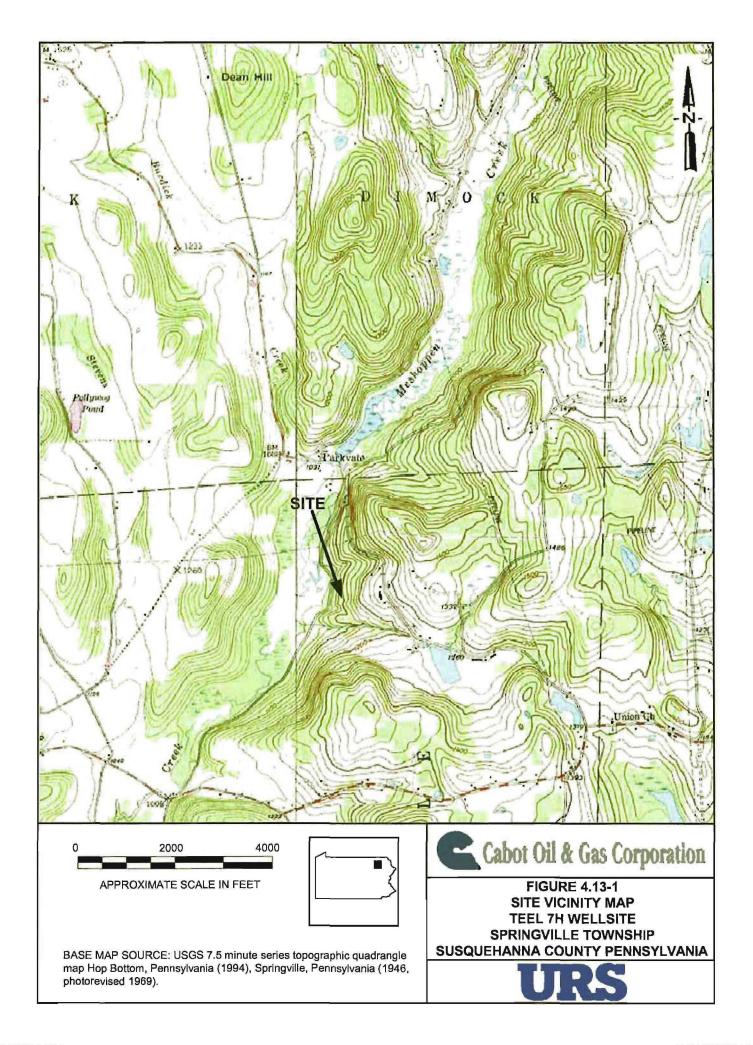


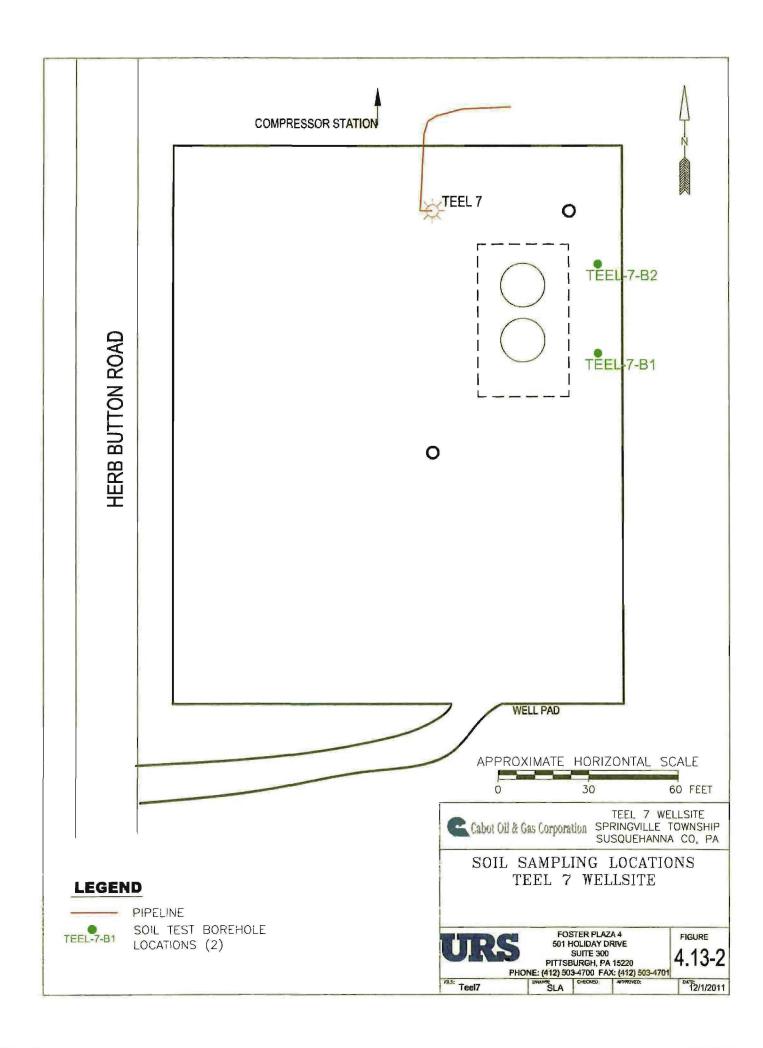


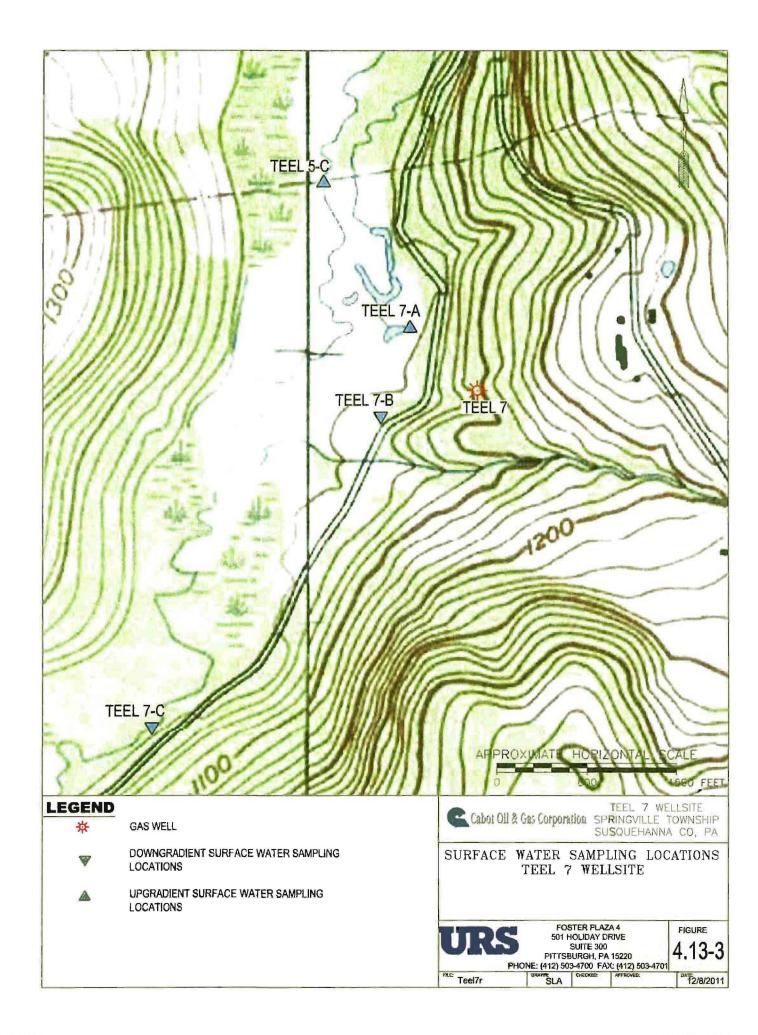














May 3, 2010 Via Electronic Mail

K&L Gates LLP Henry W. Oliver Building 535 Smithfield Street Pittsburgh, PA 15222-2312

Attention: Mr. Ken Komoroski

Re:Second Revised Scope of Services for Preliminary Site Evaluations
Incorporating Pennsylvania Department of Environmental Protection Comments
Potential Diesel Release Areas and Other Areas of Environmental Concern
Susquehanna County, Pennsylvania

Dear Mr. Komoroski:

URS Corporation (URS) is pleased to present K&L Gates and Cabot Oil & Gas Corporation (Cabot) with this Work Plan describing the scope of work developed to address allegations by Mr. Scott Ely regarding well sites operated by Cabot in Dimock and Springville Townships, Susquehanna County, Pennsylvania.

In response to less - Personal Privacy allegations, Cabot launched an investigation of the conditions and potential environmental impact of those conditions at well sites identified by less - Personal Privacy As part of the ongoing investigation, Cabot requested that URS prepare a scope or work designed to evaluate potential environmental issues that may exist, based on less - Personal Privacy representations to Cabot and the PADEP.

Prior to completion of this Work Plan, URS collected two rounds of water and soil samples near eight (8) of the sites in question. The locations of these samples were based upon information available to URS at the time in relation to the locations and the results will be used to help evaluate for potential impacts in these areas due to site operations.

In addition to these sample results, URS has identified the following data needs:

Pertinent field notes and analytical results for all well sites and surrounding

URS Corporation Foster Plaza 4 1 Holiday Drive, Suite 300 Pittsburgh, PA 15220 Tel: (412) 503-4700

DIM0209034 DIM0209216

Fax: (412) 503-4701

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areas evaluated as part of prior Pennsylvania Department of Environmental Protection (PADEP) investigations and evaluations.

 Associated environmental reports and data accumulated by Cabot and its consultants regarding investigations and evaluations (including background or baseline sampling and analysis conducted prior to well installation, Act 2 reports, etc).

Many of sallegations related to concerns of contamination resulting from drill pits. Cabot has supplied the following information regarding the materials stored or disposed in the pits and the practices employed to close these pits:

A drill pit stores drilling fluid (mud) and cuttings from the formation that has been drilled. Cabot uses fresh water with drilling additives typical for the industry to drill wells in the Marcellus Shale. Fresh-water drilling mud composition used by Cabot generally includes the following:

- 73% Fresh water:
- 23% Barite (barium sulfate; insoluable in water, same as given to patients used in X-ray procedures);
- 3% Anco Gel (sodium montmorillonite);
- 0.75% Spec Pac (polyanionic cellulose);
- 0.1% Caustic Soda (sodium hydroxide);
- 0.1% Desco (0.0001% chromium acetate, .009% proprietary sulfomethylated tannin);
   and
- 0.05% Anco Defoam (demulsifier having about 200 ppm methyl alcohol and about 400 ppm isopropyl alcohol).

Reserve pits are constructed by excavation at the well pad location. The excavation walls and floor are smoothed and a layer of a geo-textile material is placed within the excavated area of the pit and a plastic liner is installed over the geotextile. The geotextile is used to protect the liner as mud is placed in the pit. After the well has been drilled, the fluid from the pit is recovered and either reused or disposed at an approved disposal facility. Cement is mixed in with the residual cuttings remaining in the pits after fluids are removed to solidify/stabilize these materials. The pit liner is then folded over the stabilized cuttings and native soil or wellpad material is placed over the top of the pit liner.

Scope of Work to Address A Allegations — **General Conditions** to be implemented as part of this Work Plan:

The parameters to be used to evaluate the possible impact of the alleged incidents are as follows (See attached **Table 1** for surface water and groundwater samples, and **Table 2** for soils — note that the analytical method, suite of parameters, and reporting limits are provided):

#### Via Electronic Mail

# • Extended Analytical Suite (see Table 1)

- Volatile Organic Compounds (VOCs) Target Compound List [TCL] + Specific Parameters identified and requested by PADEP
- Semi-Volatile Organic Compounds (SVOCs) TCL + 10 tentatively identified compounds (TICs)
- o Total and Dissolved Metals Target Analyte List (TAL)
- o Ethylene glycol
- o Acidity
- o Alkalinity
- o Total Dissolved Solids (TDS)
- o Chloride
- o pH
- Diesel and Gasoline Range Organics (DRO and GRO) using SW-8015B Modified
- o Nitrogen as Ammonia
- o MBAS Surfactants
- o Total Petroleum Hydrocarbons (TPH) Method EPA 1664A

## • Extended Analytical Suite (see Table 2)

- VOCs TCL + Special Parameters
- o SVOCs TCL+ 10 TICs
- o Total Metals TAL
- o Ethylene glycol
- o Chloride
- о рН
- o DRO and GRO using SW-8015B Modified
- o Nitrogen as Ammonia
- o MBAS Surfactants

# • Pit/Frac Analytical Suite (see Table 2)

- VOCs TCL+ Special Parameters
- o SVOCs TCL + 10 TICs
- o Total metals
- o Ammonia
- o Ethylene glycol
- o MBAS
- o Chlorides

# • PA Short List of Petroleum Products (see Tables 1 and 2)

- o All analytes specified by PADEP on Pennsylvania Petroleum Product Short Lists for the various petroleum products (taken from the VOCs and SVOCs in Table 2)
- PA Short List for Diesel (see Tables 1 and 2)
  - o All analytes specified by PADEP on PA Short List for Diesel

#### Via Electronic Mail

Soil test boreholes to evaluate for impacts from drill pits that are alleged to have been closed improperly will be conducted as follows:

- Boreholes will be located immediately downgradient of the drill pit.
- If the downgradient location cannot be determined or is not readily identifiable, boreholes will be advanced alongside both long edges of the pits.
- Boreholes will be located as close to the reported location of the former drill pit as is practicable without compromising the integrity of the liner.
- Boreholes will be advanced to a depth below the reported depth of the drill pit. URS has estimated the depth of a typical borehole to be 12 feet below ground surface (bgs), with 4 feet being augered through the well pad and 8 feet being cored using direct push technique. A continuous core will be collected in plastic sleeves that will be logged and sampled where impacts are observed. If no impacts are observed, the lowermost portion of the borehole will be sampled for analysis.
- The boreholes will be augered through the surface of the drill pad (no samples/recovery is anticipated using direct push or split-spoon samplers).
- Once recoverable material or material that can be sampled is encountered, continuous coring will be conducted (using plastic sleeves) using direct push methods to a total depth below the former drill pit or to core refusal, whichever comes first. URS estimates that the boreholes will average 4 feet of augering and an additional 8 feet (two plastic sleeve cores) of continuous core recovery per borehole. URS will visually examine and log the subsurface materials for indications of impacts. If groundwater is encountered, this will be noted on the log.
- At a minimum, one soil sample will be collected per location, taken below the reported depth of the former drill pit (where impacts from the drill pit are most likely to occur). All intervals that appear to be impacted will be sampled.

Scope of Work to Address	Ex. 6 - Personal Privacy	Allegations by Well Site:	
Teel #5 Well Site			

alleges that a spill of diesel fuel occurred and that it was reported to PADEP but the amount was considerably underreported. He asserts that as much as 3,000 gallons was spilled and that it was "all through" the nearby creek area. Although the spill occurred in the middle of the night, it was not addressed until 6 a. m. He also asserts that the spill remediation measures were not adequate and that better measures should have been used. He says he believes a GasSearch Drilling Services (GDS) supervisor intentionally moved a reference point hay bale so that PADEP would incorrectly obtain a clean post-remediation soil sample. He asserts that diesel fuel can still be found at that site two feet under the soil/rock surface and that it is leaching into Meshoppen Creek.

Mr. Ken Komoroski K & L Gates May 3, 2010 Page 5 of 13

Via Electronic Mail

material continued to "ooze" out and the pit was covered with twenty to thirty feet of soil when the well site was reclaimed.

# Proposed Approach to Address Allegations – Teel #5 Well Site

URS has prepared an Act 2 Final Report evaluating a diesel release that occurred on June 3, 2008, remediation to address impacts, and attainment demonstration with the Statewide Health Standard for the Site. URS will review the results and conclusions of this report as part of our final report addressing Mr. Ely's allegations.

URS will collect surface water samples at three locations: (i) Meshoppen Creek, both upgradient and downgradient of the well site; and (ii) the pond immediately downgradient of the well site. These samples will be analyzed for the **Extended Analytical Suite** to evaluate for potential impacts from Site operations [COMPLETED].

URS will review and summarize all reports submitted on behalf of Cabot, including a report prepared by Resource Environmental Management, Inc., 8 Ridge Street, Montrose, PA, which was submitted to the PADEP for the Teel Property. (Notice was published in the PA Bulletin on October 11, 2008).

Analytical results from surface water sampling will be evaluated to address the allegation that impacts from the pit could have affected Meshoppen Creek and the nearby pond.

In addition, as discussed with PADEP (12/23/09), URS will evaluate for releases from the drill pit that was closed on the pad by advancing 2 soil test boreholes immediately downgradient of the location of the drill pit. URS will visually examine and log the subsurface materials for indications of impacts from site operations. Visually identified zones of impact will be sampled. The sample(s) will be analyzed for the **Pit/Frac Analytical Suite** 

# Teel #7 Well Site A alleges that the drill pit was not properly closed and that materials continued to one one. He expressed concern for sinking into the area where the pit is located and that materials could contaminate Meshoppen Creek.

# Proposed Approach to Address Allegations – Teel #7 Well Site

URS will collect surface water samples at three locations: (i) Meshoppen Creek, both upgradient and downgradient of the well site; and (ii) the wetland immediately downgradient of the well site, and analyze them for the **Extended Analytical Suite** to evaluate for potential impacts from Site operations [COMPLETED].

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Analytical results from surface water sampling will be evaluated to address the allegation that impacts from the pit could have affected Meshoppen Creek and the nearby wetland.

In addition, as discussed with PADEP (12/23/09), URS will evaluate for releases from the drill pit that was closed on the pad by advancing 2 soil test boreholes immediately downgradient of the location of the drill pit. URS will visually examine and log the subsurface materials for indications of impacts from site operations. Visually identified zones of impact will be sampled. The sample(s) will be analyzed for the **Pit/Frac Analytical Suite**.

## Ely #2 Well Site

contends that a GDS supervisor ordered an employee to throw stones through the pit liner to make it look like his father, decedent [E.S. Personal Pilway] did so and to allege [E.S. Personal Pilway] sabotaged the site. [E.S. Personal Pilway] contends that the holes in the pit liner and the material that was in the pit was leaking through the liner and threatens the spring that is used for drinking and bathing.

# Proposed Approach to Address Allegations - Ely #2 Well Site

URS will collect surface water samples at two locations and analyze them for the **Extended Analytical Suite** to evaluate for potential impacts from Site operations. The spring located upgradient of the well site and the creek formed by the spring, downgradient of the well site and immediately to the east of Ely #2 well site, will be sampled [COMPLETED].

Analytical results from surface water sampling will be evaluated to address the allegation that impacts from the pit could have affected the adjacent spring and creek to the east.

As discussed with PADEP (12/23/09), URS will evaluate for releases from the drill pit that was closed on the pad by advancing 2 soil test boreholes immediately downgradient of the location of the drill pit. URS will visually examine and log the subsurface materials for indications of impacts from site operations. Visually identified zones of impact will be sampled. The sample(s) will be analyzed for the **Pit/Frac Analytical Suite**.

## Ely #5 Well Site

Ex. 6 - Personal Privacy ontends that the drill pit was improperly solidified and was backfilled.
contends that diesel fuel spills occurred beneath the drill rig and that attempts were made to cover the spills with plastic. He is concerned that these spills present a risk to his
home, property and the creek nearby.

#### Via Electronic Mail

# Proposed Approach to Address Allegations - Ely #5 Well Site

URS will conduct test pit excavations at 4 locations distributed across the well site in the reported vicinity of the drill rig and where spills were alleged to have occurred. Eight soil samples will be collected (at 1-2 ft and 3-4 ft bgs) and analyzed for the **PA Short List for Diesel** to evaluate for potential impacts from the alleged fuel spills. A visual inspection of this location indicated that there is no creek nearby; however, URS will traverse the hillside immediately below the well site to evaluate for seeps, and, if present, sample the seeps and analyze those water samples for the **Extended Analytical Suite** to evaluate for potential impacts from Site operations.

As discussed with PADEP (12/23/09), URS will evaluate for releases from the two drill pits that were closed on the pad by advancing 4 soil test boreholes immediately downgradient of the location of the drill pits. URS will visually examine and log the subsurface materials for indications of impacts from site operations. Visually identified zones of impact will be sampled. The sample(s) will be analyzed for the **Pit/Frac Analytical Suite**.

# Elv #4 / Ely #6 Well Site

Also says that frac fluid was released while fracing operations were being conducted. His relative is house immediately downhill from the Well Site had to be evacuated and he is concerned that his relative's water supply and pond has been impacted (Note: this site was not on the original list of allegations).

# Proposed Approach to Address Allegations - Ely #4/Ely #6 Well Site

# URS will:

- Conduct test pit excavations at 4 locations distributed across the well site and collect 8 soil samples (at 1-2 ft and 3-4 ft bgs at each location)
- Conduct three soil auger borings or test pit excavations along the potential migration pathway from the well pad to the downhill area and collect 6 soil samples (at 1-2 ft and 3-4 ft bgs at each location)
- Collect water samples from the Spring House and Pond

All soil and water samples will be analyzed for the **Extended Analytical Suite** to evaluate for potential impacts from Site operations.

# Lewis #2 Well Site

into the soil bank approximately one year ago when the site was reclaimed. Mr. Ely feels that several drill pits have been improperly reclaimed and that the liners were carelessly torn in the process of solidifying pit contents.

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## Proposed Approach to Address Allegations – Lewis #2 Well Site

URS will collect surface water samples at two locations and analyze them for the Extended Analytical Suite to evaluate for potential impacts from Site operations. The creek immediately to the east of Lewis #2 Well Site, both upgradient and downgradient of the well site, will be sampled [COMPLETED].

Analytical results from surface water sampling in the adjacent creek will be evaluated to address the allegation that impacts from the pit could have affected the creek.

The location of the area where the soil that was allegedly impacted with diesel will be identified and test pit excavations will be conducted at 4 locations distributed across the identified area with 8 samples collected (at 1-2 ft and 3-4 ft bgs at each location). These soil samples will be analyzed for the **PA Short List for Diesel** to evaluate for potential impacts from the alleged released diesel.

As discussed with PADEP (12/23/09), URS will evaluate for releases from the drill pit that was closed on the pad by advancing 2 soil test boreholes immediately downgradient of the location of the drill pit. URS will visually examine and log the subsurface materials for indications of impacts from site operations. Visually identified zones of impact will be sampled. The sample(s) will be analyzed for the Pit/Frac Analytical Suite and PA Short List for Diesel.

# Costello #1 Well Site

contends that the drill pit liner was ripped open in the middle of winter and that a GDS supervisor told him not to be concerned and that it would be taken care of.

# Proposed Approach to Address Allegations - Costello #1 Well Site

URS will collect surface water samples at three locations and analyze them for the Extended Analytical Suite to evaluate for potential impacts from Site operations. The creek immediately to the east of Costello #1 Well Site, both upgradient and downgradient of the well site, and the pond downgradient will be sampled [COMPLETED].

URS will contact the neighbor immediately downgradient of the Well Site and inquire about further allegation that their water was discolored for a period of time. If possiure, URS will work with Cabot's exclusive water sampling firm to collect a sample of their water before any treatment is performed.

Analytical results from surface water sampling and the drinking water source at the downgradient property will be evaluated to address the allegation that impacts from the pit could potentially have affected the environment.

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As discussed with PADEP (12/23/09), URS will evaluate for releases from the drill pit that was closed on the pad by advancing 2 soil test boreholes immediately downgradient of the location of the drill pit. URS will visually examine and log the subsurface materials for indications of impacts from site operations. Visually identified zones of impact will be sampled. The sample(s) will be analyzed for the **Pit/Frac Analytical Suite**.

# Gesford #3 Well Site

Mr. Ely contends there were issues with four different pits at this site, that there were various spills and a large diesel fuel spill. His concern is heightened because his home is located nearby and below this site. He asserts that PADEP knew about one diesel spill, but not a second spill that occurred. He says the second spill was not reported to PADEP but was intentionally covered up with stone. He says PADEP eventually came out and learned that the spill was covered up. Mr. Ely also asserts a material that looked like antifreeze accumulated in the well cellar and was not addressed for months.

Mr. Ely also contends there was a pile of dirt mixed with diesel fuel on the back side of the site that remained "all summer long" close to a nearby creek that flows past Mr. Ely's home. He said PADEP sampled the situation and found diesel fuel and that all the dirt was hauled away thereafter.

# Proposed Approach to Address Allegations – Gesford #3 Well Site

URS will collect surface water samples at two locations and analyze them for the **Extended Analytical Suite** to evaluate for potential impacts from Site operations. The creek immediately adjacent to the east of the well site, both upgradient and downgradient of the well site will be sampled [COMPLETED].

URS will also review and summarize all reports submitted on behalf of Cabot. Analytical results from surface water sampling will be evaluated and reports prepared for and by Cabot will be reviewed and summarized to address the allegation that impacts from the pits could potentially have affected the adjacent creek.

The location PADEP has documented to have diesel fuel impacts (the area between the former location of the drill rig and the former location of the mud pump) will be identified and test pit excavations will be conducted at 6 locations distributed across the identified area with 12 samples collected (at 1-2 ft and 3-4 ft bgs at each location). These soil samples will be analyzed for the **PA Short List for Diesel** to evaluate for potential impacts from the alleged released diesel. The test pits will be evaluated visually for the presence of drilling mud.

As discussed with PADEP (12/23/09), URS will evaluate for releases from the drill pit that was closed on the pad by advancing 4 soil test boreholes immediately downgradient of the location of the drill pit. URS will visually examine and log the subsurface materials for

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Via Electronic Mail

indications of impacts from site operations. Visually identified zones of impact will be sampled. The sample(s) will be analyzed for the Pit/Frac Analytical Suite.

# Gesford #7 Well Site

contends that a diesel fuel spill occurred but was reported to PADEP as a soap discharge. The spilled material can be found six inches below the gravel, as it was covered with stone.

Approximately six weeks before the interview, from a tank and impacted a 25'x 15' area with black water. The area where the leak occurred was not fully compacted and thus was porous. Expension of the spilled material up and he refused. No material was reported to have left the well pad.

# Proposed Approach to Address Allegations – Gesford #7 Well Site

URS will conduct test pit excavations at 16 locations distributed across the well site to include the areas identified by to have been impacted by frac water and diesel fuel and collect 32 samples (at 1-2 ft and 3-4 ft bgs at each location). These soil samples will be analyzed for the **Pit/Frac Analytical Suite** to evaluate for potential impacts from Site operations.

# **Brooks #1H Well Site**

ays that 168,000 gallons of fluids were put down the well and approximately 16,000 ganons came back. There was no way to shut down the well and the fluid ran down the hill side and into a nearby creek. There were soap suds in the creek and here with a bulldozer to contain it. The water was "sucked up" and put into frac tanks.

# Proposed Approach to Address Allegations – Brooks #1H Well Site

#### URS will:

- Conduct test pit excavations at 4 locations distributed across the well site and collect 8 soil samples (at 1-2 ft and 3-4 ft bgs at each location)
- Conduct five soil auger borings or test pit excavations along the potential migration pathway from the well pad to the downhill area and collect 10 soil samples (at 1-2 ft and 3-4 ft bgs at each location)
- Collect surface water samples from the creek adjacent the site to the north [COMPLETED]

All samples will be analyzed for the **Extended Analytical Suite** to evaluate for potential impacts from Site operations.

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# Black #1 Well Site

asserts that there is a drill pit that continues to leach black liquid and the pit should have been removed. He alleges that the spring has been contaminated and that fish were killed in a nearby pond.

# Proposed Approach to Address Allegations – Black #1 Well Site

URS will collect surface water samples at two locations and analyze them for the Extended Analytical Suite to evaluate for potential impacts from Site operations. One catchment basin and the outlet from the adjacent pond (both immediately downgradient of the seep area from the well site) will be sampled [COMPLETED].

As discussed with PADEP (12/23/09), URS will evaluate for releases from the drill pit that was closed on the pad by advancing 2 soil test boreholes immediately downgradient of the location of the drill pit. URS will visually examine and log the subsurface materials for indications of impacts from site operations. Visually identified zones of impact will be sampled. The sample(s) will be analyzed for the Pit/Frac Analytical Suite.

URS will review and summarize all reports submitted on behalf of Cabot and make recommendations regarding the disposition of the remediation system currently in place at the Site.

Analytical results from surface water sampling will be evaluated to address the allegation that impacts from the pit could potentially have affected the seep and/or the pond.

# Chudleigh #1 Well Site

Ex. 6-Personal Privacy | alleged that brine water was trucked to this well site and deposited in the mud pit. Interviews with site personnel identified the material as three truckloads of drilling fluid, not brine, from the Hunsinger well. Tears present in the mud pit liner that would allow the brine to infiltrate the subsurface were allegedly observed before the drilling fluid was off-loaded here.

#### Proposed Approach to Address Allegations – Chudleigh #1 Well Site

URS will collect surface water samples at two locations and analyze them for the **Extended**Analytical Suite to evaluate for potential impacts from the alleged operations. The most immediate potential downgradient receptor stream will be identified and sampled, both upgradient and downgradient of the well site.

URS will further evaluate for releases from the drill pit by advancing two soil test boreholes immediately downgradient of the location of the drill pit. URS will visually examine and log the subsurface materials for indications of impacts from site operations. Visually identified zones of impact will be sampled. The sample(s) will be analyzed for the **Pit/Frac Analytical Suite**.

Via Electronic Mail

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# Teel #6 Well Site

Interviews with site personnel indicated that a drum containing petroleum products and antifreeze was buried at a location on the drill pad and subsequently excavated and removed from the location; however, the excavated drum contained only a portion of the material present when the drum was buried. This material in the subsurface could potentially enter Meshoppen Creek.

# Teel #6 Well Site

Interviews with site personnel indicated that a drum containing petroleum products and antifreeze was buried at a location on the drill pad and subsequently excavated and removed from the location; however, the excavated drum contained only a portion of the material present when the drum was buried. This material in the subsurface could potentially enter Meshoppen Creek.

# Proposed Approach to Address Allegations – Teel #6 Well Site

URS will attempt to determine the location at which the drum was allegedly buried before it was excavated and removed from the well pad. Once the approximate location has been determined, URS will conduct test pit excavations at 4 locations distributed across the approximate identified location and collect 12 samples (at 1-2 ft bgs, the approximate depth of burial of the drum, and at 1-2 ft below the approximate depth of the buried drum). These soil samples will be analyzed for a list of parameters consisting of the **PA Short Lists of Petroleum Products** encompassing all petroleum products, and glycols, to evaluate for potential impacts from a release from the drum identified in this allegation.

URS will also collect surface water samples at two locations on Meshoppen Creek, upgradient and downgradient of the well site. These samples will be analyzed for a list of parameters consisting of the **PA Short Lists of Petroleum Products** encompassing all petroleum products, and glycols. Analytical results from the surface water sampling will be evaluated to address the concern that the buried drum had potentially released material to the subsurface and could impact Meshoppen Creek.

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Via Electronic Mail

URS appreciates the opportunity to prepare this scope of work for K&L Gates and Cabot. If there are any questions or comments regarding this proposal, please feel free to call me at (412) 503-4690.

Sincerely,

URS CORPORATION

Robert T. Hilliard

Principal Environmental Scientist/ Senior Project Manager

James Pinta, Jr., Ph.D., PG

Jew Vila J.

PA Licensed Professional Geologist

A PG# PG000701G

Attachments: Table 1 and Table 2

Table 1
Analytical Suite - Surface and Groundwater
Second Revised Scope of Services for Preliminary Site Evaluations

Method	Analyte	PQL	Units	
Volatile Organic Compounds				
8260 W	Acetone	10	ug/L	
8260 W	Benzene	1	ug/L	
8260 W	Bromochloromethane	1	ug/L	
8260 W	Bromodichloromethane	1	ug/L	
8260 W	Bromoform	1	ug/L	
8260 W	Bromomethane	1	ug/L	
8260 W	2-Butanone (MEK)	10	ug/L	
8260 W	n-Butylbenzene	1	ug/L	
8260 W	sec-Butylbenzene	1	ug/L	
8260 W	Carbon disulfide	1	ug/L	
8260 W	Carbon tetrachloride	1	ug/L	
8260 W	Chlorobenzene	1	ug/L	
8260 W	Chloroethane	1	ug/L	
8260 W	Chloroform	1	ug/L	
8260 W	Chloromethane	1	ug/L	
8260 W	Dibromochloromethane	1	ug/L	
8260 W	1,2-Dichlorobenzene	1	ug/L	
8260 W	1,3-Dichlorobenzene	1	ug/L	
8260 W	1,4-Dichlorobenzene	1	ug/L	
8260 W	1,1-Dichloroethane	1	ug/L	
8260 W	1,2-Dichloroethane	1	ug/L	
8260 W	1,2-Dichloroethene (Total)	2	ug/L	
8260 W	1,1-Dichloroethene	1	ug/L	
8260 W	cis-1,2-Dichloroethene	1	ug/L	
8260 W	trans-1,2-Dichloroethene	1	ug/L	
8260 W	1,2-Dichloropropane	1	ug/L	
8260 W	cis-1,3-Dichloropropene	1	ug/L	
8260 W	trans-1,3-Dichloropropene	1	ug/L	
8260 W	Ethylbenzene	1	ug/L	
8260 W	2-Hexanone	10	ug/L	
8260 W	Isopropylbenzene (Cumene)	1	ug/L	
8260 W	p-Isopropyltoluene	1	ug/L	
8260 W	Methylene Chloride	1	ug/L	
8260 W	4-Methyl-2-pentanone (MIBK)	10	ug/L	
8260 W	Methyl-tert-butyl ether	1	ug/L	
8260 W	Naphthalene	2	ug/L	
8260 W	n-Propylberizene	1	ug/L	
8260 W	Styrene	1	ug/L	
8260 W	1,1,2,2-Tetrachioroethane	1	ug/L	
8260 W	Tetrachloroethene	1	ug/L	

Table 1
Analytical Suite - Surface and Groundwater
Second Revised Scope of Services for Preliminary Site Evaluations

	Method	Analyte	PQL	Units
***************************************	8260 W	Toluene	1	ug/L
	8260 W	1,1,1-Trichloroethane	1	ug/L
	8260 W	1,1,2-Trichloroethane	1	ug/L
	8260 W	Trichloroethene	1	ug/L
	8260 W	1,2,4-Trimethylbenzene	1	ug/L
	8260 W	1,3,5-Trimethylbenzene	1	ug/L
	8260 W	Vinyl chloride	1	ug/L
	8260 W	Xylene (Total)	3	ug/L
	8260 W	m&p-Xylene	2	ug/L
	8260 W	o-Xylene	1	ug/L
	8260 W	1,2,4-Trichlorobenzene	1	ug/L
	8260 W	1,2-dibromoethane	1	ug/L

# **Semi-volatile Organic Compounds**

8270 W	Phenol	1	ug/L
8270 W	bis(2-Chloroethyl) ether	1	ug/L
8270 W	2-Chlorophenol	1	ug/L
8270 W	1,3-Dichlorobenzene	1	ug/L
8270 W	1,4-Dichlorobenzene	1	ug/L
8270 W	Benzyl alcohol	1	ug/L
8270 W	1,2-Dichlorobenzene	1	ug/L
8270 W	2-Methylphenol(o-Cresol)	1	ug/L
8270 W	bis(2-Chloroisopropyl) ether	1	ug/L
8270 W	3&4-Methylphenol(m&p Cresol)	2	ug/L
8270 W	N-Nitroso-di-n-propylamine	1	ug/L
8270 W	Hexachloroethane	1	ug/L
8270 W	Nitrobenzene	1	ug/L
8270 W	Isophorone	1	ug/L
8270 W	2-Nitrophenol	1	ug/L
8270 W	2,4-Dimethylphenol	1	ug/L
8270 W	Benzoic acid	10	ug/L
8270 W	bis(2-Chloroethoxy)methane	1	ug/L
8270 W	2,4-Dichlorophenol	1	ug/L
8270 W	1,2,4-Trichlorobenzene	1	ug/L
8270 W	Naphthalene	1	ug/L
8270 W	4-Chloroaniline	1	ug/L
8270 W	Hexachloro-1,3-butadiene	1	ug/L
8270 W	4-Chloro-3-methylphenol	1	ug/L
8270 W	2-Methylnaphthalene	1	ug/L
8270 W	Hexachlorocyclopentadiene	1	ug/L
8270 W	2,4,6-Trichlorophenol	1	ug/L
8270 W	2,4,5-Trichlorophenol	2.5	ug/L

Table 1
Analytical Suite - Surface and Groundwater
Second Revised Scope of Services for Preliminary Site Evaluations

Method	Analyte	PQL	Units
8270 W	2-Chloronaphthalene	1	ug/L
8270 W	2-Nitroaniline	2.5	ug/L
8270 W	Dimethylphthalate	1	ug/L
8270 W	Acenaphthylene	1	ug/L
8270 W	2,6-Dinitrotoluene	1	ug/L
8270 W	3-Nitroaniline	2.5	ug/L
8270 W	Acenaphthene	1	ug/L
8270 W	2,4-Dinitrophenol	2.5	ug/L
8270 W	4-Nitrophenol	1	ug/L
8270 W	Dibenzofuran	1	ug/L
8270 W	2,4-Dinitrotoluene	1	ug/L
8270 W	Diethylphthalate	1	ug/L
8270 W	4-Chlorophenylphenyl ether	1	ug/L
8270 W	Fluorene	1	ug/L
8270 W	4-Nitroaniline	2.5	ug/L
8270 W	4,6-Dinitro-2-methylphenol	2.5	ug/L
8270 W	N-Nitrosodiphenylamine	1	ug/L
8270 W	4-Bromophenylphenyl ether	1	ug/L
8270 W	Hexachlorobenzene	1	ug/L
8270 W	Pentachlorophenol	2.5	ug/L
8270 W	Phenanthrene	1	ug/L
8270 W	Anthracene	1	ug/L
8270 W	Di-n-butylphthalate	1	ug/L
8270 W	Fluoranthene	1	ug/L
8270 W	Pyrene	1	ug/L
8270 W	Butylbenzylphthalate	1	ug/L
8270 W	3,3'-Dichlorobenzidine	1	ug/L
8270 W	Benzo(a)anthracene	1	ug/L
8270 W	Chrysene	1	ug/L
8270 W	bis(2-Ethylhexyl)phthalate	1	ug/L
8270 W	Di-n-octylphthalate	1	ug/L
8270 W	Benzo(b)fluoranthene	1	ug/L
8270 W	Benzo(k)fluoranthene	1	ug/L
8270 W	Benzo(a)pyrene	1	ug/L
8270 W	Indeno(1,2,3-cd)pyrene	1	ug/L
8270 W	Dibenz(a,h)anthracene	1	ug/L
8270 W	Benzo(g,h,i)perylene	1	ug/L
8270 W	N-Nitrosodimethylamine	1	ug/L
8270 W	Azobenzene	1	ug/L
8270 W	Carbazole	1	ug/L
8270 W	1-Methylnaphthalene	1	ug/L
8270 W	Tentatively Identified Com	•	-
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Table 1

Analytical Suite - Surface and Groundwater

Second Revised Scope of Services for Preliminary Site Evaluations

Analyte

Method

PQL Units

Target Analyte List Metals (Total)				
6010 Total	Aluminum	50	ug/L	
6010 Total	Antimony	5	ug/L	
6010 Total	Arsenic	5	ug/L	
6010 Total	Barium	10	ug/L	
6010 Total	Beryllium	1	ug/L	
6010 Total	Boron	50	ug/L	
6010 Total	Cadmium	1	ug/L	
6010 Total	Chromium	5	ug/L	
6010 Total	Cobalt	5	ug/L	
6010 Total	Copper	5	ug/L	
6010 Total	Iron	50	ug/L	
6010 Total	Lead	2	ug/L	
6010 Total	Manganese	5	ug/L	
6010 Total	Molybdenum	20	ug/L	
6010 Total	Nickel	10	ug/L	
6010 Total	Selenium	5	ug/L	
6010 Total	Silver	1	ug/L	
6010 Total	Thallium	10	ug/L	
6010 Total	Vanadium	5	ug/L	
6010 Total	Zinc	10	ug/L	
6010 Total	Calcium	1000	ug/L	
6010 Total	Magnesium	200	ug/L	
6010 Total	Sodium	1000	ug/L	
6010 Total	Potassium	500	ug/L	
7470 Total	Mercury	0.2	ug/L	
Target Analyte List	Metals (Dissol	ved)		
6010 Dissolved	Aluminum	50	ug/L	
6010 Dissolved	Antimony	5	ug/L	
6010 Dissolved	Arsenic	5	ug/L	
6010 Dissolved	Barium	10	ug/L	
6010 Dissolved	Beryllium	1	ug/L	
6010 Dissolved	Boron	50	ug/L	
6010 Dissolved	Cadmium	1	ug/L	
6010 Dissolved	Chromium	5	ug/L	
6010 Dissolved	Cobalt	5	ug/L	
6010 Dissolved	Copper	5	ug/L	
6010 Dissolved	Iron	50	ug/L	
6010 Dissolved	Lead	2	ug/L	
	4 of 6			

7010

Table 1

Analytical Suite - Surface and Groundwater

Second Revised Scope of Services for Preliminary Site Evaluations

Method	Analyte	PQL	Units
6010 Dissolved	Manganese	5	ug/L
6010 Dissolved	Molybdenum	20	ug/L
6010 Dissolved	Nickel	10	ug/L
6010 Dissolved	Selenium	5	ug/L
6010 Dissolved	Silver	1	ug/L
6010 Dissolved	Thallium	10	ug/L
6010 Dissolved	Vanadium	5	ug/L
6010 Dissolved	Zinc	10	ug/L
6010 Dissolved	Calcium	1000	ug/L
6010 Dissolved	Magnesium	200	ug/L
6010 Dissolved	Sodium	1000	ug/L
6010 Dissolved	Potassium	500	ug/L
7470 Dissolved	Mercury	0.2	ug/L

# **PA Short List for Diesel**

8260	Benzene	5	ug/kg
8260	Toluene	5	ug/kg
8260	Ethylbenzene	5	ug/kg
8260	Isopropylbenzene (Cumene)	5	ug/kg
8260	Methyl-tert-butyl ether	1	ug/L
8260	Naphthalene	333	ug/kg
8260	1,3,5-Trimethylbenzene	5	ug/kg
8260	1,2,4-Trimethylbenzene	5	ug/kg

# **Combined - PA Short List for Petroleum Products**

8260	Benzene	1	ug/L
8260	Toluene	1	ug/L
8260	Ethylbenzene	1	ug/L
8260	Xylene (Total)	3	ug/L
8260	Isopropylbenzene (Cumene)	1	ug/L
8260	Naphthalene	2	ug/L
8260	1,3,5-Trimethylbenzene	1	ug/L
8260	1,2,4-Trimethylbenzene	1	ug/L
8260	1,2-Dichloroethane	1	ug/L
8260	1,2-dibromoethane	1	ug/L
8260	Methyl-tert-butyl ether	1	ug/L
6010 S	Lead	2	ug/L
8270	Fluorene	1	ug/L

5 of 6

Table 1
Analytical Suite - Surface and Groundwater
Second Revised Scope of Services for Preliminary Site Evaluations

	Method	Analyte	PQL	Units
***************************************	8270	Anthracene	1	ug/L
	8270	Phenanthrene	1	ug/L
	8270	Pyrene	1	ug/L
	8270	Benzo(a)anthracene	1	ug/L
	8270	Chrysene	1	ug/L
	8270	Benzo(b)fluoranthene	1	ug/L
	8270	Benzo(a)pyrene	1	ug/L
	8270	Benzo(g,h,i)perylene	1	ug/L
	8270	Indeno(1,2,3-cd)pyrene	1	ug/L

# **Indicator Parameters & General Chemistry**

8015	Glycols	100.0	mg/L
8015	TPH (C06-C10)	200	ug/L
8015 WD	Diesel Components	0.1	mg/L
1664 WH	Total Petroleum Hydrocarbons	5	mg/L
5540C W	Surfactants	0.1	mg/L
4500 CIE W	Chloride	3	mg/L
4500H+B	pH at 25 Degrees C	1	Std. Units
3501 W	Nitrogen, Ammonia	0.1	mg/L
2310B W	Acidity, Total	10	mg/L
2320BW	Alkalinity, Total as CaCO3	10	mg/L
2540C W	Total Dissolved Solids	10	mg/L

Table 2
Analytical Suite - Soils
Second Revised Scope of Work for Preliminary Site Evaluations

Volatile Organic Compounds           8260         Chloromethane         5           8260         Vinyl chloride         5           8260         Bromomethane         5           8260         Bromomethane         5           8260         Chloroethane         5           8260         Methylene Chloride         5           8260         1,1-Dichloroethene         5           8260         trans-1,2-Dichloroethane         5           8260         cis-1,2-Dichloroethane         5           8260         Carbon tetrachloride         5           8260         Carbon tetrachloride         5           8260         Benzene         5           8260         Tichloroethane         5           8260         Tichloroethane         5           8260         Tichloroethane         5           8260         Troblencoptopane         5           8260         Trobloroethane         5           8260         Trobloroethane         5           8260         Toluene         5           8260         Toluene         5           8260         Tichloroethane         5           8260	Method	Analyte	PQL	Unit
8260         Chloromethane         5           8260         Vinyl chloride         5           8260         Bromomethane         5           8260         Chloroethane         5           8260         Methylene Chloride         5           8260         1,1-Dichloroethene         5           8260         1,1-Dichloroethene         5           8260         1,1-Dichloroethane         5           8260         Cis-1,2-Dichloroethane         5           8260         Chloroform         5           8260         Carbon tetrachloride         5           8260         Tolichloroethane         5           8260         Tolichloroethane         5           8260         Trichloroethane         5           8260         Toluene         5           8260         Tetrachloroethane         5           8260         Tetrachloroethane         5           8260	e Organ	ic Compounds		
8260         Vinyl chloride         5           8260         Bromomethane         5           8260         Chloroethane         5           8260         Methylene Chloride         5           8260         Methylene Chloride         5           8260         1,1-Dichloroethene         5           8260         trans-1,2-Dichloroethane         5           8260         cis-1,2-Dichloroethane         5           8260         Carbon tetrachloride         5           8260         Talpichloroethane         5           8260         Talpichloroethane         5           8260         Trichloroethane         5           8260         Trichloroethene         5           8260         Trichloroethane         5           8260         Toluene         5           8260         Tetrachloroethane         5           8260         Tetrachloroethane         5	· • · J · · ·			
8260         Bromomethane         5           8260         Chloroethane         5           8260         Methylene Chloride         5           8260         1,1-Dichloroethene         5           8260         trans-1,2-Dichloroethene         5           8260         cis-1,2-Dichloroethene         5           8260         cis-1,2-Dichloroethane         5           8260         Chloroform         5           8260         1,1,1-Trichloroethane         5           8260         Carbon tetrachloride         5           8260         Benzene         5           8260         Tolichloroethane         5           8260         Tichloroethene         5           8260         Toluene         5           8260         Bromodichloromethane         5           8260         Toluene         5           8260         Toluene         5           8260         Toluene         5           8260         Tetrachloroethane         5           8260         Tetrachloroethene         5           8260         Tetrachloroethene         5           8260         Ethylbenzene         5	8260	Chloromethane	5	ug/k
8260       Chloroethane       5         8260       Methylene Chloride       5         8260       1,1-Dichloroethene       5         8260       trans-1,2-Dichloroethene       5         8260       cis-1,2-Dichloroethene       5         8260       Chloroform       5         8260       Chloroform       5         8260       Chloroform       5         8260       Carbon tetrachloride       5         8260       Benzene       5         8260       Benzene       5         8260       Trichloroethane       5         8260       Trichloroethene       5         8260       Trans-1,3-Dichloropropane       5         8260       Toluene       5         8260       Toluene       5         8260       Toluene       5         8260       Tetrachloroethane       5         8260       Tetrachloroethene       5         8260       Dibromochloromethane       5         8260       Dibromochloromethane       5         8260       Ethylbenzene       5         8260       Toluene       5         8260       Toluene	8260	Vinyl chloride	5	ug/k
8260       Methylene Chloride       5         8260       1,1-Dichloroethene       5         8260       trans-1,2-Dichloroethene       5         8260       cis-1,2-Dichloroethene       5         8260       Chloroform       5         8260       Chloroform       5         8260       Chloroform       5         8260       Carbon tetrachloride       5         8260       Benzene       5         8260       Benzene       5         8260       Trichloroethane       5         8260       Trichloroethane       5         8260       Toluchloropropane       5         8260       Bromodichloromethane       5         8260       Toluene       5         8260       Toluene       5         8260       Tetrachloroethane       5         8260       Tetrachloroethene       5         8260       Dibromochloromethane       5         8260       Chlorobenzene       5         8260       Ethylbenzene       5         8260       Tetrachloroethane       5         8260       Toluchene       5         8260       Tetrach	8260	Bromomethane	5	ug/k
8260       1,1-Dichloroethene       5         8260       trans-1,2-Dichloroethene       5         8260       1,1-Dichloroethane       5         8260       cis-1,2-Dichloroethene       5         8260       Chloroform       5         8260       Chloroform       5         8260       Carbon tetrachloride       5         8260       Benzene       5         8260       Benzene       5         8260       Trichloroethane       5         8260       Trichloroethene       5         8260       Bromodichloromethane       5         8260       Toluene       5         8260       Tetrachloroethane       5         8260       Tetrachloroethane       5         8260       Dibromochloromethane       5         8260       Ethylbenzene       5         8260       Ethylbenzene       5         8260       Toluene       5         8260       Toluene       5	8260	Chloroethane	5	ug/k
8260       trans-1,2-Dichloroethene       5         8260       1,1-Dichloroethane       5         8260       cis-1,2-Dichloroethene       5         8260       Chloroform       5         8260       Carbon tetrachloride       5         8260       Benzene       5         8260       Benzene       5         8260       Trichloroethane       5         8260       Trichloroethene       5         8260       Trichloroethene       5         8260       Bromodichloromethane       5         8260       Bromodichloromethane       5         8260       Toluene       5         8260       Toluene       5         8260       Toluene       5         8260       Tetrachloroethane       5         8260       Tetrachloroethene       5         8260       Tetrachloroethene       5         8260       Chlorobenzene       5         8260       Ethylbenzene       5         8260       Toluene       5         8260       Toluene       5         8260       Toluene       5         8260       Toluene       5 <td>8260</td> <td>Methylene Chloride</td> <td>5</td> <td>ug/k</td>	8260	Methylene Chloride	5	ug/k
8260       1,1-Dichloroethane       5         8260       cis-1,2-Dichloroethene       5         8260       Chloroform       5         8260       1,1,1-Trichloroethane       5         8260       1,2-Dichloroethane       5         8260       Benzene       5         8260       Tzichloroethane       5         8260       Tzichloroethane       5         8260       Bromodichloromethane       5         8260       Tzichloropropane       5         8260       Tas-1,3-Dichloropropene       5         8260       Toluene       5         8260       Toluene       5         8260       Tetrachloroethane       5         8260       Tetrachloroethane       5         8260       Dibromochloromethane       5         8260       Ethylbenzene       5         8260       Ethylbenzene       5         8260       Tetrachloroethane       5         8260       Toluene       5         8260       Tetrachloroethane       5         8260       Toluene       5         8260       Toluene       5         8260       Toluene	8260	1,1-Dichloroethene	5	ug/k
8260         cis-1,2-Dichloroethene         5           8260         Chloroform         5           8260         1,1,1-Trichloroethane         5           8260         Carbon tetrachloride         5           8260         Benzene         5           8260         Trichloroethane         5           8260         Trichloroethene         5           8260         Bromodichloromethane         5           8260         Bromodichloromethane         5           8260         Toluene         5           8260         Toluene         5           8260         Toluene         5           8260         Toluene         5           8260         Tetrachloroethane         5           8260         Tetrachloroethane         5           8260         Dibromochloromethane         5           8260         Ethylbenzene         5           8260         Ethylbenzene         5           8260         Toluene         5           8260         Toluene         5           8260         Toluene         5           8260         Toluene         5           8260         T	8260	trans-1,2-Dichloroethene	5	ug/k
8260       Chloroform       5         8260       1,1,1-Trichloroethane       5         8260       Carbon tetrachloride       5         8260       Benzene       5         8260       1,2-Dichloroethane       5         8260       Trichloroethene       5         8260       Bromodichloromethane       5         8260       Bromodichloromethane       5         8260       Toluene       5         8260       Toluene       5         8260       Toluene       5         8260       Tetrachloroethane       5         8260       Tetrachloroethene       5         8260       Dibromochloromethane       5         8260       Ethylbenzene       5         8260       Ethylbenzene       5         8260       Ethylbenzene       5         8260       Xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,	8260	1,1-Dichloroethane	5	ug/k
8260       1,1,1-Trichloroethane       5         8260       Carbon tetrachloride       5         8260       Benzene       5         8260       1,2-Dichloroethane       5         8260       Trichloroethene       5         8260       Bromodichloromethane       5         8260       Bromodichloromethane       5         8260       Toluene       5         8260       Toluene       5         8260       Cis-1,3-Dichloropropene       5         8260       Toluene       5         8260       Tetrachloroethane       5         8260       Tetrachloroethane       5         8260       Dibromochloromethane       5         8260       Ethylbenzene       5         8260       Ethylbenzene       5         8260       Toluene       5         8260       Ethylbenzene       5         8260       Toluene       5         8260       Ethylbenzene       5         8260       Toluene       5         8260       Toluene       5         8260       Toluene       5         8260       Toluene       5 <td>8260</td> <td>cis-1,2-Dichloroethene</td> <td>5</td> <td>ug/k</td>	8260	cis-1,2-Dichloroethene	5	ug/k
8260       Carbon tetrachloride       5         8260       Benzene       5         8260       1,2-Dichloroethane       5         8260       Trichloroethene       5         8260       1,2-Dichloropropane       5         8260       Bromodichloromethane       5         8260       Toluene       5         8260       Toluene       5         8260       Cis-1,3-Dichloropropene       5         8260       Tetrachloroethane       5         8260       Tetrachloroethene       5         8260       Dibromochloromethane       5         8260       Ethylbenzene       5         8260       Ethylbenzene       5         8260       Toluene       5         8260       Ethylbenzene       5         8260       Toluene       5         8260       Ethylbenzene       5         8260       Toluene       5	8260	Chloroform	5	ug/k
8260       Benzene       5         8260       1,2-Dichloroethane       5         8260       Trichloroethene       5         8260       1,2-Dichloropropane       5         8260       Bromodichloromethane       5         8260       trans-1,3-Dichloropropene       5         8260       Toluene       5         8260       cis-1,3-Dichloropropene       5         8260       Tetrachloroethane       5         8260       Tetrachloroethane       5         8260       Dibromochloromethane       5         8260       Ethylbenzene       5         8260       Ethylbenzene       5         8260       m&p-Xylene       10         8260       xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	1,1,1-Trichloroethane	5	ug/k
8260       1,2-Dichloroethane       5         8260       Trichloroethene       5         8260       1,2-Dichloropropane       5         8260       Bromodichloromethane       5         8260       trans-1,3-Dichloropropene       5         8260       Toluene       5         8260       cis-1,3-Dichloropropene       5         8260       1,1,2-Trichloroethane       5         8260       Tetrachloroethane       5         8260       Dibromochloromethane       5         8260       Ethylbenzene       5         8260       Ethylbenzene       5         8260       m&p-Xylene       10         8260       xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	Carbon tetrachloride	5	ug/k
8260       Trichloroethene       5         8260       1,2-Dichloropropane       5         8260       Bromodichloromethane       5         8260       trans-1,3-Dichloropropene       5         8260       Toluene       5         8260       cis-1,3-Dichloropropene       5         8260       Tetrachloroethane       5         8260       Tetrachloroethene       5         8260       Dibromochloromethane       5         8260       Ethylbenzene       5         8260       Ethylbenzene       5         8260       m&p-Xylene       10         8260       o-Xylene       5         8260       Xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	Benzene	5	ug/k
8260       1,2-Dichloropropane       5         8260       Bromodichloromethane       5         8260       trans-1,3-Dichloropropene       5         8260       Toluene       5         8260       cis-1,3-Dichloropropene       5         8260       1,1,2-Trichloroethane       5         8260       Tetrachloroethane       5         8260       Dibromochloromethane       5         8260       Chlorobenzene       5         8260       Ethylbenzene       5         8260       m&p-Xylene       10         8260       o-Xylene       5         8260       Xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	1,2-Dichloroethane	5	ug/k
8260       Bromodichloromethane       5         8260       trans-1,3-Dichloropropene       5         8260       Toluene       5         8260       cis-1,3-Dichloropropene       5         8260       1,1,2-Trichloroethane       5         8260       Tetrachloroethene       5         8260       Dibromochloromethane       5         8260       Chlorobenzene       5         8260       Ethylbenzene       5         8260       m&p-Xylene       10         8260       o-Xylene       5         8260       Xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	Trichloroethene	5	ug/k
8260       trans-1,3-Dichloropropene       5         8260       Toluene       5         8260       cis-1,3-Dichloropropene       5         8260       1,1,2-Trichloroethane       5         8260       Tetrachloroethene       5         8260       Dibromochloromethane       5         8260       Chlorobenzene       5         8260       Ethylbenzene       5         8260       m&p-Xylene       10         8260       o-Xylene       5         8260       Xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	1,2-Dichloropropane	5	ug/k
8260       Toluene       5         8260       cis-1,3-Dichloropropene       5         8260       1,1,2-Trichloroethane       5         8260       Tetrachloroethene       5         8260       Dibromochloromethane       5         8260       Chlorobenzene       5         8260       Ethylbenzene       5         8260       m&p-Xylene       10         8260       o-Xylene       5         8260       Xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	Bromodichloromethane	5	ug/k
8260       cis-1,3-Dichloropropene       5         8260       1,1,2-Trichloroethane       5         8260       Tetrachloroethene       5         8260       Dibromochloromethane       5         8260       Chlorobenzene       5         8260       Ethylbenzene       5         8260       m&p-Xylene       10         8260       o-Xylene       5         8260       Xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	trans-1,3-Dichloropropene	5	ug/k
8260       1,1,2-Trichloroethane       5         8260       Tetrachloroethene       5         8260       Dibromochloromethane       5         8260       Chlorobenzene       5         8260       Ethylbenzene       5         8260       m&p-Xylene       10         8260       o-Xylene       5         8260       Xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	Toluene	5	ug/k
8260         Tetrachloroethene         5           8260         Dibromochloromethane         5           8260         Chlorobenzene         5           8260         Ethylbenzene         5           8260         m&p-Xylene         10           8260         o-Xylene         5           8260         Xylene (Total)         15           8260         Styrene         5           8260         Bromoform         5           8260         Isopropylbenzene (Cumene)         5           8260         1,1,2,2-Tetrachloroethane         5           8260         n-Propylbenzene         5           8260         1,3,5-Trimethylbenzene         5           8260         1,2,4-Trimethylbenzene         5           8260         sec-Butylbenzene         5	8260	cis-1,3-Dichloropropene	5	ug/k
8260         Dibromochloromethane         5           8260         Chlorobenzene         5           8260         Ethylbenzene         5           8260         m&p-Xylene         10           8260         o-Xylene         5           8260         Xylene (Total)         15           8260         Styrene         5           8260         Bromoform         5           8260         Isopropylbenzene (Cumene)         5           8260         1,1,2,2-Tetrachloroethane         5           8260         n-Propylbenzene         5           8260         1,3,5-Trimethylbenzene         5           8260         1,2,4-Trimethylbenzene         5           8260         sec-Butylbenzene         5	8260		5	ug/k
8260       Chlorobenzene       5         8260       Ethylbenzene       5         8260       m&p-Xylene       10         8260       o-Xylene       5         8260       Xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	Tetrachloroethene	5	ug/k
8260       Ethylbenzene       5         8260       m&p-Xylene       10         8260       o-Xylene       5         8260       Xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	Dibromochloromethane	5	ug/k
8260       m&p-Xylene       10         8260       o-Xylene       5         8260       Xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	Chlorobenzene	5	ug/k
8260       m&p-Xylene       10         8260       o-Xylene       5         8260       Xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	Ethylbenzene	5	ug/k
8260       o-Xylene       5         8260       Xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	·	10	ug/k
8260       Xylene (Total)       15         8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	• •	5	ug/k
8260       Styrene       5         8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	·	15	ug/k
8260       Bromoform       5         8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	· · · · · ·		ug/k
8260       Isopropylbenzene (Cumene)       5         8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5	8260	•		ug/k
8260       1,1,2,2-Tetrachloroethane       5         8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5		Isopropylbenzene (Cumene)		ug/k
8260       n-Propylbenzene       5         8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5				ug/k
8260       1,3,5-Trimethylbenzene       5         8260       1,2,4-Trimethylbenzene       5         8260       sec-Butylbenzene       5		, , ,	_	ug/k
8260 1,2,4-Trimethylbenzene 5 8260 sec-Butylbenzene 5				ug/k
8260 sec-Butylbenzene 5		•		ug/k
•		<u>-</u>		ug/k
propropyrenent		·		ug/k
8260 1,3-Dichlorobenzene 5				ug/k
8260 1,4-Dichlorobenzene 5		· ·		ug/k
8260 n-Butylbenzene 5		•		ug/k

Table 2
Analytical Suite - Soils
Second Revised Scope of Work for Preliminary Site Evaluations

Wet	nod	Analyte	PQL	Units
82	30	1,2-Dichlorobenzene	5	ug/kg
82	50	Naphthalene	5	ug/kg
82	30	1,2-dibromoethane	5	ug/kg
82	30	1,2-Dichloroethene (Total	) 10	ug/kg
826	30	2-Butanone (MEK)	10	ug/kg
829	30	2-Hexanone	10	ug/kg
826	30	Carbon disulfide	5	ug/kg
826	30	Acetone	10	ug/kg
826	30	Methyl-tert-butyl ether	· 5	ug/kg
826	30 4	4-Methyl-2-pentanone (MIB	K) 10	ug/kg
829	30	TOTAL BTEX	30	ug/kg
82	30	Phenol	333	ug/kg
82	30	bis(2-Chloroethyl) ether	333	ug/kg
82	30	2-Chlorophenol	333	ug/kg
82	30	1,3-Dichlorobenzene	333	ug/kg
829	30	1,4-Dichlorobenzene	333	ug/kg
829	30	Benzyl alcohol	333	ug/kg
82	30	1,2-Dichlorobenzene	333	ug/kg
829	30	2-Methylphenol(o-Cresol	) 333	ug/kg
829	30	bis(2-Chloroisopropyl) eth-	er 333	ug/kg
82	30	N-Nitroso-di-n-propylamin	e 333	ug/kg
829	30	Hexachloroethane	333	ug/kg
829	30	Nitrobenzene	333	ug/kg
829	30	Isophorone	333	ug/kg
829	30	2-Nitrophenol	333	ug/kg
829	30	2,4-Dimethylphenol	333	ug/kg
82	30	bis(2-Chloroethoxy)methal	ne 333	ug/kg
829	30	2,4-Dichlorophenol	333	ug/kg
829	30	1,2,4-Trichlorobenzene	333	ug/kg
826	30	Naphthalene	333	ug/kg

# **Semi-volatile Organic Compounds**

8270	4-Chloroaniline	333	ug/kg
8270	Hexachloro-1,3-butadiene	333	ug/kg
8270	4-Chloro-3-methylphenol	333	ug/kg
8270	2-Methylnaphthalene	333	ug/kg
8270	Hexachlorocyclopentadiene	333	ug/kg
8270	2,4,6-Trichlorophenol	333	ug/kg
8270	2,4,5-Trichlorophenol	833	ug/kg
8270	2-Chloronaphthalene	333	ug/kg
8270	2-Nitroaniline	833	ug/kg

Table 2
Analytical Suite - Soils
Second Revised Scope of Work for Preliminary Site Evaluations

N	lethod	Analyte	PQL	Units
***************************************	8270	Dimethylphthalate	333	ug/kg
	8270	Acenaphthylene	333	ug/kg
	8270	2,6-Dinitrotoluene	333	ug/kg
	8270	3-Nitroaniline	833	ug/kg
	8270	Acenaphthene	333	ug/kg
	8270	2,4-Dinitrophenol	833	ug/kg
	8270	4-Nitrophenol	333	u <b>g/kg</b>
	8270	Dibenzofuran	333	ug/kg
	8270	2,4-Dinitrotoluene	333	ug/kg
	8270	Diethylphthalate	333	ug/kg
	8270	4-Chlorophenylphenyl ether	333	ug/kg
	8270	Fluorene	333	ug/kg
	8270	4-Nitroaniline	833	ug/kg
	8270	4,6-Dinitro-2-methylphenol	833	ug/kg
	8270	N-Nitrosodiphenylamine	333	ug/kg
	8270	4-Bromophenylphenyl ether	333	ug/kg
	8270	Hexachlorobenzene	333	ug/kg
	8270	Pentachlorophenol	833	ug/kg
	8270	Phenanthrene	333	ug/kg
	8270	Anthracene	333	ug/kg
	8270	Di-n-butylphthalate	333	ug/kg
	8270	Fluoranthene	333	ug/kg
	8270	Pyrene	333	ug/kg
	8270	Butylbenzylphthalate	333	ug/kg
	8270	3,3'-Dichlorobenzidine	333	ug/kg
	8270	Benzo(a)anthracene	333	ug/kg
	8270	Chrysene	333	ug/kg
	8270	bis(2-Ethylhexyl)phthalate	333	ug/kg
	8270	Di-n-octylphthalate	333	ug/kg
	8270	Benzo(b)fluoranthene	333	ug/kg
	8270	Benzo(k)fluoranthene	333	ug/kg
	8270	Benzo(a)pyrene	333	ug/kg
	8270	Indeno(1,2,3-cd)pyrene	333	ug/kg
1	8270	Dibenz(a,h)anthracene	333	ug/kg
;	8270	Benzo(g,h,i)perylene	333	ug/kg
;	8270	3&4-Methylphenol(m&p Cresol)	666	ug/kg
	8270	Tentatively Identified Com		

# **Target Analyte List Metals**

mg/kg	10	Aluminum	6010 S
mg/kg	0.5	Antimony	6010 S
ma/ka	0.5	Arsenic	6010 S

Table 2
Analytical Suite - Soils
Second Revised Scope of Work for Preliminary Site Evaluations

Method	Analyte	PQL	Units
6010 S	Barium	2	mg/kg
6010 S	Beryllium	0.2	mg/kg
6010 S	Boron	5	mg/kg
6010 S	Cadmium	0.2	mg/kg
6010 S	Chromium	0.5	mg/kg
6010 S	Cobalt	1	mg/kg
6010 S	Copper	1	mg/kg
6010 S	Iron	10	mg/kg
6010 S	Lead	0.5	mg/kg
6010 S	Manganese	1	mg/kg
6010 S	Molybdenum	2	mg/kg
6010 S	Nickel	2	mg/kg
6010 S	Selenium	0.5	mg/kg
6010 S	Silver	0.2	mg/kg
6010 S	Thallium	2	mg/kg
6010 S	Vanadium	1	mg/kg
6010 S	Zinc	1	mg/kg
6010 S	Calcium	200	mg/kg
6010 S	Magnesium	50	mg/kg
6010 S	Sodium	500	mg/kg
6010 S	Potassium	50	mg/kg
7471 S	Mercury		mg/kg

# **PA Short List for Diesel**

8260	Benzene	5	ug/kg
8260	Toluene	5	ug/kg
8260	Ethylbenzene	5	ug/kg
8260	Isopropylbenzene (Cumene)	5	ug/kg
8260	Methyl-tert-butyl ether	5	ug/kg
8260	Naphthalene	333	ug/kg
8260	1,3,5-Trimethylbenzene	5	ug/kg
8260	1,2,4-Trimethylbenzene	5	ug/kg
8260	Methyl-tert-butyl ether	5	ug/kg

# **Combined - PA Short List for Petroleum Products**

8260	Benzene	5	ug/kg
8260	Toluene	5	ug/kg
8260	Ethylbenzene	5	ug/kg
8260	Xylene (Total)	15	ug/kg
8260	Isopropylbenzene (Cumene)	5	ug/kg

Table 2
Analytical Suite - Soils
Second Revised Scope of Work for Preliminary Site Evaluations

	Method	Analyte	PQL	Units
	8260	Naphthalene	333	ug/kg
	8260	1,3,5-Trimethylbenzene	5	ug/kg
	8260	1,2,4-Trimethylbenzene	5	ug/kg
	8260	1,2-Dichloroethane	5	ug/kg
	8260	1,2-dibromoethane	5	ug/kg
	8260	Methyl-tert-butyl ether	5	ug/kg
	6010 S	Lead	0.5	mg/kg
	8270	Fluorene	333	ug/kg
	8270	Anthracene	333	ug/kg
	8270	Phenanthrene	333	ug/kg
	8270	Pyrene	333	ug/kg
	8270	Benzo(a)anthracene	333	ug/kg
	8270	Chrysene	333	ug/kg
	8270	Benzo(b)fluoranthene	333	ug/kg
	8270	Benzo(a)pyrene	333	ug/kg
	8270	Benzo(g,h,i)perylene	333	ug/kg
	8270	Indeno(1,2,3-cd)pyrene	333	ug/kg
Indicator	Parame	ters		
	8015	Glycols	100	mg/kg
	8015	Gasoline Range Organics	10	mg/kg
	8015 SD	Diesel Components	6.67	mg/kg
	1664	TPH	10	mg/kg
	ASTM	Extraction for MBAS + Chlorides	NA	NA
	5540C	MBAS Surfatactants (Extracted)	0.1	mg/L
	4500	Chloride (Extracted)	3	mg/L
	9045 SL	pH at 25 Degrees C	1	Std. Units
	3501 S	Nitrogen, Ammonia	5	mg/kg

URS

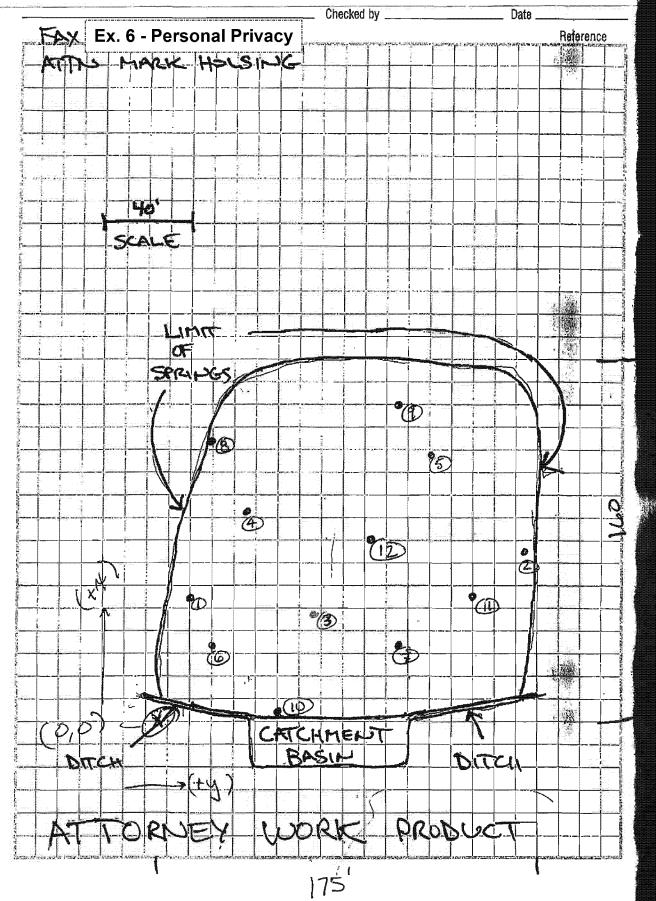
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Project No. 39939654.08heet 1 of \_\_\_\_

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Date 628 10



# **Coordinates of 3-D Systematic Random Sampling Points**

Note: Sampling points that are not within the area of contamination should be dis

	0th Row	4.3	
Xi,	Yi	Zi	::
14.5	55.4	2.8	(D)
19.5	55.2	7.8	
55.2	69.0	2.3	
79.9	66.4	5.4	
90.2	55.4	7.7	
121.7	68.8	6.8	
132.6	65.7	9.8	
145.7	56.5	7.6	
163.9	62.5	7.2	

,	[6	1st Row		
	Xi,	Yi	Zi	
	,			
	4.2	82.0	7.9	
	23.8	75.1	4.1	
	44.6	79.5	3.0	
	65.8	84.4	5.1	
	88.9	85.0	9.3	-
	96.8	80.4	7.0	12)
	109.4	71.3	5.3	
	135.3	86.6	7.9	
	163.3	81.8	6.5	
	172.5	75.6	2.6	(2)

Xi,	-1şi Row Yı	ZI	
20.4	41.3	6.8	3
28.4	39.7	9.7	
62.9	46.9	5.0	
71.3	47.8	4.2	
86.5	40.9	2.3	
124.7	51.1	9.0	
141.1	37.3	9.0	
155.5	52.6	3.6	

\_carded. You will need to generate another group of data sets if the number of v

4	2nd Row	all vest	
Xi,	Yi	Zi	
6.3	100.8	3.9	
23.3	98.2	3.4	
45.0	93.6	6.3	(4)
70.8	90.6	3.4	
84.7	98.0	6.1	
114.1	102.2	5.8	
119.8	94.9	8.7	
149.4	91.9	8.7	
-			
:			

and the state of the state of the state of	A		
, A.	3rd Row		
XI,	Yi	Zi	
	·		
18.0	117.5	6.2	
45.0	108.8	3.7	
65.1	116.0	6.7	
78.5	106.0	4.8	
89.4	109.3	2.8	<u> </u>
125.8	118.0	4.6	(5)
131.2	108.5	6.3	
165.8	117.4	3.9	
166.1	105.0	7.6	
100.1	100.0	7.0	

	-2nd Row	6.2 P
Xi,	Yi	Zi
		_
23.8	36.9	5.5
25.5	21.3	6.7
46.9	20.5	4.7
69.2	28.0	3.7
82.6	23.0	2.1
106.4	23.7	7.3
123.8	34.4	6.2
152.2	27.9	8.3

Xi,	-3rd Row Yi	Zi
14.2	6.0	2.3
41.5	3.6	4.1
56.1	11.7	2.3
75.1	8.4	8.4
111.7	19.1	4.6
118.0	8.0	7.8
135.8	17.6	4.4
168.5	18.9	9.1

∠lid data sets in a group is less than the minimum number of samples otherwise re

a group	10 1000 1		
	4th Row	A PURE	
XI,	Υi	ZI	
17.6	128.6	9.6	_
25.2	125.9	7.80	(원)
57.6	127.7	8.5	
73.1	135.8	8.7	
96.9	129.9	4.2	
117.4	137.0	4.9	
121.7	129.3	3.9	
145.4	129.8	2.3	
165.4	135.5	5.3	

J	USam	hiez oui	GI MISE I	
		5th Row		
	Xi,	Yi	Zi	
	21.6	141.7	2.6	
	47.9	150.3	<b>6</b> .7	
	54.5	154.1	2.4	
	87.8	153.2	4.2	
	97.2	152.9	9.1	
	108.3	140.6	6.5	(q)
	137.8	151.1	2.2	•
	152.0	153.5	2.5	
	167.8	140.8	7.6	
			****	

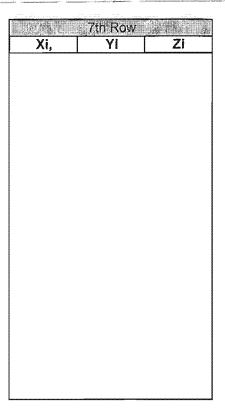
XI,	-4th Row Yi	Zi	
55.1	2.8	8.6	(O)
172.1	0.1	8.8	

	-5th Row	T.
Xi,	YI	Zi
	<u></u>	
		ļ
		_

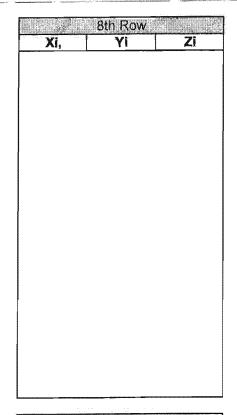
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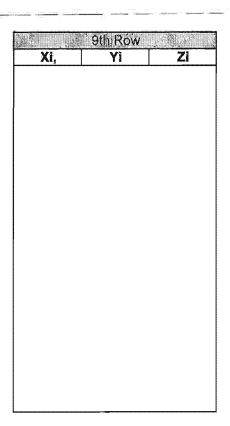
		6th Row	10.70
	Xi,	YI	Zi
-			
	168.1	158.3	2.9
	,,,,,	,,,,,,	

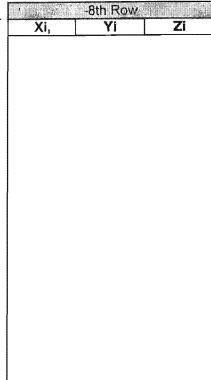
	-6	th Roy	V	
Xi,		ΥI		Zi

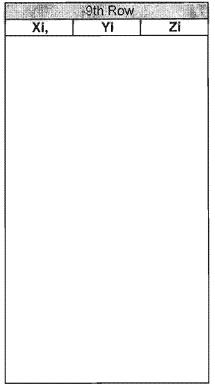


	-7th Row	
XI,	ΥI	Zi









	10th Row	- X-1
Xi,	Yi	ZI
	41111	

	-10th Row	10.110.11
Xi,	YI	Zi

Page \_\_\_\_\_ of \_\_ Project No. Sheet \_\_ Computed by \_ Date Checked by

Date\_

Reference

KANDY LOCATION

DUPLICATE TO GET BASS. Bits & Lowers

(225.5, 35.3)

# **Systematic Random Sampling Workbook**

Pennsylvania Department of Environmental Protection Land Recycling Program Version Date: January 26, 2000

Please forward comments or suggestions to Samuel Fang at fang.samuel@dep.state.pa.us.

## **Coordinates of 3-D Systematic Random Sampling Points**

Note: Sampling points that are not within the area of contamination should be dis

0th Row			
XI,	XI, YI Zi		
1.2	87.1	2.6	
12.4	79.7	3.2	
28.2	77.8	7.9	
51.6	77.3	9.7	
71.8	85.2	9.2	
70.3	76.7	5.2	
84.9	79.1	7.4	
104.8	78.3	7.6	
117.4	77.6	2.4	
143.5	84.8	2.8	
163.8	86.9	4.8	
170.9	78.4	5.5	
177.0	79.5	8.7	
207.7	84.8	8.5	
214.0	79.2	6.3	
225.5	83.3	7.4	

1st Row			
Yi	Zi		
92.1	7.3		
88.9	9.2		
91.3	5.2		
99.6	2.7		
92.2	8.4		
96.8	5.4		
97.3	5.9		
98.3	7.9		
96.0	7.2		
99.7	4.1		
96.1	5.9		
96.1	7.4		
90.0	5.1		
95.4	2.8		
93.4	7.3		
	92.1 88.9 91.3 99.6 92.2 96.8 97.3 98.3 96.0 99.7 96.1 90.0 95.4		

-1st Row		
Xi,	Yi	Zi
4.6	67.6	6.9
25.4	64.4	7.0
36.4	71.0	8.8
46.5	65.3	3.1
70.2	64.3	8.6
86.2	61.0	3.6
94.2	65.7	8.2
120.4	62.8	2.1
127.0	71.1	4.6
146.4	63.4	2.2
164.0	65.2	3.1
181.9	68.9	7.5
187.6	61.6	2.7
218.4	74.1	5.2
225.8	61.1	8.8
237.2	61.6	8.4

iscarded. You will need to generate another group of data sets if the number of v

2nd Row				
Xi,	Yi	ZI		
		_		
5.0	404.4			
5.0	101.4	3.1		
8.8	104.4	7.0		
37 <i>.</i> 8	105.5	4.4		
44.9	105.1	9.4		
55.1	102.8	8.1		
73.9	105.1	3.6		
95.0	104.5	5.2		
105.5	108.7	5.9		
121.0	108.3	9.8		
133.5	111.3	8.2		
150.6	102.9	3.6		
169.1	103.2	3.5		
181.9	109.7	4.4		
197.5	110.3	5.9		
212.4	105.4	3.6		
221.1	101.0	8.7		
££1.1	101.0	0.7		

ila sels i	r the nui	mber or v
	3rd Row	
Xi,	Yi	Zi
19.6	117.3	2.4
96.6	116.7	2.2
148.4	116.1	8.5
157.7	116.4	6.1
182.7	119.0	7.8
188.0	114.7	9.8
199.3	119.8	4.1

-2nd Row			
XI,	Yi	Zi	
1.1	56.6	8.5	
22.3	58.7	8.2	
39.0	53.7	8.7	
44.0	55.9	9.8	
62.8	56.9	8.0	
74.6	49.0	2.4	
86.5	50.8	5.8	
106.6	54.8	4.6	
129.4	57.5	7.1	
142.2	54.4	9.7	
158.5	51.0	5.2	
173.9	55.0	3.8	
182.5	50.5	4.3	
203.7	50.1	5.8	
222.7	59.3	2.2	
229.3	57.5	4.5	
	2.10		

-3rd Row		
XI,	Yi	ZI
5.7	35.5	7.4
21.3	38.7	7.3
45.2	41.2	8.9
50.5	37.9	7.7
71.4	38.9	7.1
83.1	40.5	8.9
96.9	43.0	2.1
123.9	43.2	7.9
127.3	44.4	5.6
152.3	41.8	8.3
160.0	44.9	5.7
169.5	38.4	4.0
186.6	39.5	7.4
215.5	47.0	2.5
221.1	39.6	6.8
238.7	38.2	8.6

valid data sets in a group is less than the minimum number of samples otherwise r

n a group	) IS	less	than	the
		Row		~~~~
Xi,		ΥI	Z	I
90 80 80 80 80				
0				

el Ol Sali	ipies ou	IGI MI2G
5th Row		
XI,	ΥI	ZI

-4th Row		
XI,	Yi	ZI
		l
15.1	31.7	2.1
29.9	34.0	3.5
52.1	25.0	4.3
52.6	23.2	3.1
79.2	21.6	8.0
98.1	24.5	5.6
104.4	29.2	4.5
125.9	28.3	3.5
133.0	29.0	8.4
146.1	25.7	9.3
169.0	29.1	4.1
189.4	27.1	3.6
199.7	33.9	7.3
222.3	30.0	9.4
224.4	30.7	8.7

-5th Row			
Xi,	Yi	Zi	
2.4	13.2	7.1	
21.6	21.1	6.7	
36.5	9.6	3.9	
61.3	20.5	9.1	
70.3	18.1	4.4	
82.2	10.8	7.4	
95.8	18.5	2.2	
113.9	10.3	4.2	
136.6	14.3	8.1	
141.1	11.8	9.5	
154.8	9.4	7.9	
173.1	20.6	8.4	
181.2	8.9	7.7	
217.8	20.6	7.8	
221.2	16.5	6.7	

required.

6th Rov	6th Row			
YI	Zi			
	YI			

-6th Row		
Xí,	Yi	Zi
11.9 19.4	7.4 6.5	7.5 2.3
83.5 92.7	2.3 5.3	6.1 5.5
132.5	7.2	2.1
228.6	3.4	6.8

	7th Row	
Xi,	ΥI	ZI
		<u> </u>

	-7th Row	
Xi,	YI	Zi
		ŀ

	8th Row	
XI,	Yi	Zi
	······································	_å

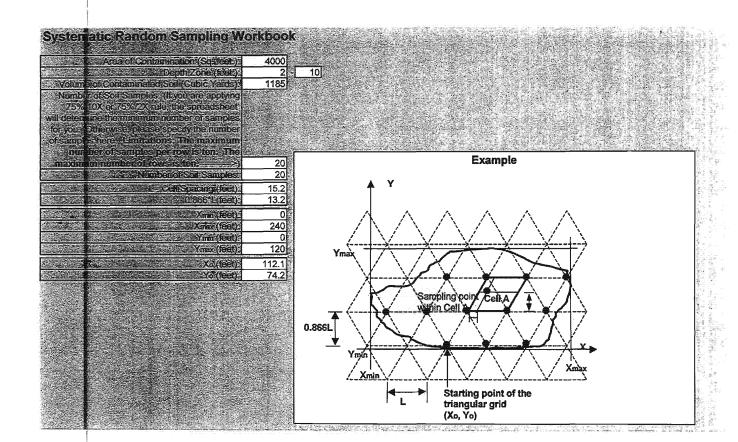
	9th Row	
XI,	Yi	Zi

	-8th Row	
XI,	Yi	Zi

-9th Row				
Xi,	Yi		Zi	

10th Row		
XI,	Yi	ZI
L		<u></u>

	-10th Row		
Xi,	Yi	Zi	
***************************************			
1			



## **Triangular Grid Node Coordinate Pairs**

Starting Point ---->

0th Row	
(Xi, Yi)	
•	
-9.5	74.2
5.7	74.2
20.9	74.2
36.1	74.2
51.3	74.2
66.5	74.2
81.7	74.2
96.9	74.2
1.4	- ; •
127.3	74.2
142.5	74.2
157.7	74.2
172.9	74.2
188.1	74.2
203.3	74.2
218.5	74.2
233.7	74.2
	I

87.4
87.4
87.4
87.4
87.4
87.4
87.4
87.4
87.4
87.4
87.4
87.4
87.4
87.4
87.4
87.4

-1st Row	
(Xi, Yi)	
-1.9	61
13.3	61
28.5	61
43.7	61
58.9	61
74.1	61
89.3	61
104.5	61
119.7	61
134.9	61
150.1	61
165.3	61
180.5	61
195.7	61
210.9	61
226.1	61
diamento 1	U 1

2nd Row	
(Xi, Yi)	I
-	1
-9.5	100.6
5.7	100.6
20.9	100.6
36.1	100.6
51.3	100.6
66.5	100.6
81.7	100.6
96.9	100.6
112.1	100.6
127.3	100.6
142.5	100.6
157.7	100.6
172.9	100.6
188.1	100.6
203.3	100.6
218.5	100.6
233.7	100.6

3rd R	ow
(XI, Y	(i)
-1.9	113.8
13.3	113.8
28.5	113.8
43.7	113.8
58.9	113.8
74.1	113.8
89.3	113.8
104.5	113.8
119.7	113.8
134.9	113.8
150.1	113.8
165.3	113.8
180.5	113.8
195.7	113.8
210.9	113.8
226.1	113.8
1	1

***************************************	4th R	ow
	(Xi, Y	7)
	• •	,

-2nd Row	
(Xi, Yi)	
-	
-9.5	47.8
5.7	47.8
20.9	47.8
36.1	47.8
51.3	47.8
66.5	47.8
81.7	47.8
96.9	47.8
112.1	47.8
127.3	47.8
142.5	47.8
157.7	47.8
172.9	47.8
188.1	47.8
203.3	47.8
218.5	47.8
233.7	47.8
	- 1

-3rd Rov	W
(Xi, Yi)	
-1.9	34.6
13.3	34.6
28.5	34.6
43.7	34.6
58.9	34.6
74.1	34.6
89.3	34.6
104.5	34.6
119.7	34.6
134.9	34.6
150.1	34.6
165.3	34.6
180.5	34.6
195.7	34.6
210.9	34.6
226.1	34.6

-4th Row	
(XI, YI)	
(71, 11)	
-9.5	21.4
5.7	21.4
20.9	21.4
36.1	21.4
51.3	21.4
66.5	21.4
81.7	21.4
96.9	21.4
112.1	21.4
127.3	21.4
142.5	21.4
157.7	21.4
172.9	21.4
188.1	21.4
203.3	21.4
218.5	21.4
233.7	21.4
233.1	21.4

5th Row (XI, YI)

6th Row (XI, YI)

-5th Row (XI, YI) -1.9 8.2 8.2 13.3 8.2 28.5 8.2 43.7 58.9 8.2 8.2 74.1 89.3 8.2 104.5 8.2 8.2 119.7 134.9 8.2 150.1 8.2 8.2 165.3 180.5 8.2 195.7 8.2 210.9 8.2 226.1 8.2

-6th Row (Xi, Yi) -9.5 -5 **ភុស្សុស្សុស្សុស្** 5.7 20.9 36.1 51.3 66.5 81.7 96.9 112.1 127.3 142.5 157.7 -5 -5 -5 172.9 188.1 203.3 218.5 -5 233.7 -5

7th Row	8th Row
(Xi, Yi)	(Xi, Yi)
-7th Row	-8th Row
	-0011000
(Xi, Yi)	(XI, YI)
	(XI, YI)

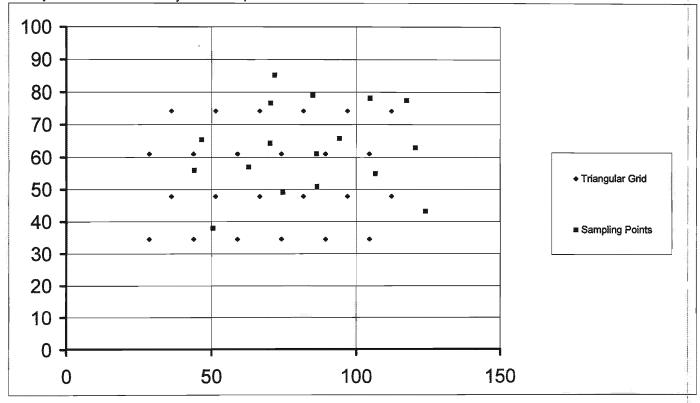
9th Row	10th Row
(Xi, Yi)	(XI, YI)
-9th Row	-10th Row
(Xi, Yi)	(XI, Yi)
ı	
ı	ļ

Note: The 'Source Data' may need to be adjusted manually in order to allow the triangular grid pattern and sampling points to appear.

Move the mouse pointer to the center of the plot area and then right-click the mouse. Select 'Source Data' from the menu.

Select 'Series' tab. Click collapse dialog buttons at the right end of X Values and Y Values boxes to adjust for the appropriate ranges of source data.

You may need to hold the "Control" key to select multiple columns of data.



## **Triangular Grid Node Coordinates**

	Xi (Even Row)	Xi (Odd Row)	Yi
-10			
-9			
-8	-9.5	-1.9	
-7 <sup>-</sup>	5.7	13.3	
-6	20.9	28.5	-5.0
-5	36.1	43.7	8.2
-4	51.3	58.9	21.4
-3	66.5	74.1	34.6
-2	81.7	89.3	47.8
-1	96.9	104.5	61.0
0		119.7	
1	127.3	134.9	87.4
2	142.5	150.1	100.6
3	157.7	165.3	113.8
4	172.9	180.5	
5	188.1	195.7	
6	203.3	210.9	
7	218.5	226.1	
8	233.7		
9			
10			